

## Violent Video Games and Aggression: Moderation Analysis of Family Monitoring to control Aggressive Behavior among Pakistani PUBG Players

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*In Pakistani society, there are growing concerns that violent video games are developing anti-social behaviour in the young generation. Among other video games, PUBG is under heavy criticism despite its popularity among youths. This study sought to understand empirically that is there any connection between playing PUBG and aggression. Moreover, the study investigated the moderating role of family monitoring in decreasing PUBG Play and aggressive behaviour. A virtual snowball sampling technique was used, in which self-rated responses from 1000 players were obtained. The study's findings showed a strong significant positive correlation between playing PUBG and a higher level of aggressive behaviour. The result of moderation shows that significant family monitoring exists. This moderation is properly working on the light users of PUBG whereas the heavy users exposed to the violence deviate from this supervision. The study recommended that all the stakeholders should play their role in educating the masses about the risk associated with playing excessive violent video games.*

**Keywords:** PUBG Play; Violent Video Games; Aggressive Behaviour; Moderating Aggression; Family Monitoring.

### Introduction

Public concern has been raised over the link between the young generation's aggressive behaviour and violent video games (Academy of Pediatrics, 2021; Bushman et al., 2015). Children and young people are now exposed to significantly more media violence than ten years ago. The young generation is attracted towards video games as developers enable advanced features in the games, and there are growing concerns regarding the usage of these games. Most of the players of these games are children, teenagers and youth, so the effect of online gaming on developing certain kind of human behaviours, whether good or bad, possibly exist (Alzahrani et al., 2017). Some kids now watch

nearly twelve hours of media daily (Academy of Pediatrics, 2021). But watching violent content in TV shows or movies is simply a passive activity; however, playing an online violent video game is an active activity. According to research, People learn better when they are actively participating, according to research (Soto and Marzocchi, 2021).

Viewers of violent television can choose whether or not to recognize violent characters, although players of violent online video games are compulsory to do so in the game. The benefits of viewing violent television shows are only indirect, whereas playing online violent video games provides instant gratification (Lee et al., 2021). There is a variety of video games, but Player Unknown's Battlegrounds

(PUBG), a shooting game, has recently become popular among young people in Pakistan, as there are 3.1 billion (3100 million) players worldwide, and in Pakistan, 1.2 million addicted users of PUBG are playing this game (Statista, 2023; Baidya, 2021). A Media report by Amin (2020) highlighted that players from Pakistan are spending a hefty amount on upgrading their online games while negative consequences of these violent games are also reported. These violent video games are very popular since they are simple to access, free to play, and almost need no special skills. But each coin has two sides. Even though these games could be very entertaining, ignoring any potential negative effects.

It is quite concerning that violent games like PUBG are becoming more and more popular. Despite their apparent difference, these games all have the same objective, which is to eliminate the opposition, despite their apparent differences brutally. Battle royale video games may not seem to have any immediate effects, yet there is plenty of literature that plenty of literature supports the opposite. Occurrences have repeatedly demonstrated that juvenile anger and violence have substantially increased. Players have been discovered to injure themselves, commit suicide, and even attack their family members in tragic and unfortunate incidents (Mamun et al., 2020). Despite these negative effects, it is still difficult to pinpoint what led to this unfavourable change in behaviour. However, a probable hypothesis being investigated by numerous experts is a rise in young people's exposure to violent video games.

Excessive play of violent video games has been related to several violent incidents. This has worried parents in addition to attracting the attention of specialists worldwide. Despite public scepticism and media denials, experts are concerned about the possible negative impacts of exposure to violent video games. The association between exposure to violent video games and violence has been the subject of numerous studies. However, there hasn't been much research conducted on PUBG play, aggressive behaviour and parental monitoring function, especially in the context of Pakistan.

### **PUBG exposure and Aggression**

Young people's attention has recently been drawn mostly to the new genre "battle royale," with Player Unknown's Battlegrounds as a famous example (PUBG). This game is primarily a shooting game, but it has a very competitive and aggressive rule where a lot of players (at least 100) congregate in

one area to murder each other with various weapons. Asian nations like Pakistan and India have greatly increased PUBG popularity. Nine games, including PUBG and Fortnite, were prohibited in China in 2018 by the Online Gaming Ethics Review Committee due to their detrimental effects on children. India also attempts to outlaw PUBG, arguing that it undermines children's education and encourages bullying and violence (Mamun and Griffiths, 2019). Due to their "violent" content, Fortnite and PUBG are classified by the Entertainment Software Rating Board (ESRB) in the USA as "Teen" games (13 years of age or older). But a meta-analysis denies no evidence that playing video games and developing negative effects (Drummond et al., 2020).

However, in Pakistan, the situation is entirely different, as after so many violent incidents, suicides and antisocial behaviours due to extreme playing of violent video games, the Pakistan Telecommunication Authority imposed a ban on the game in compliance with a detailed judgment issued by Lahore High Court (PTA, 2020). Moreover, Khyber Pakhtunkhwa Assembly passed a resolution vide No. 338 regarding enforcing a complete ban on PUBG (PTA, 2020). But soon after, the government of Pakistan lifted the ban as the strong criticism received that the players had lost a hefty amount invested in the Game (Hussain, 2020). Occasionally, cases of suicide, kidnapping and violence due to the extreme playing of PUBG have been reported to the Police (Shahzad, 2022; Ansari, 2022).

A tragic incident occurred in the middle of April 2022, a 14-year-old girl Dua Zahra resident of Karachi, Pakistan, was reported missing. She later reappeared in Bahawalnagar, where she was now married to Zaheer Ahmed, age 21. In the investigation, she disclosed that they were connected through (PUBG) and initially, her parents forced her to stop the excessive use of PUBG. But she decided to leave home; later on, the couple was brought before the Sindh High Court, which issued its decision and ordered DuaZehra to a shelter home after declaring that she was free to live with whomever she chose. The teenage girl's father subsequently challenged the SHC's decision in the case before the Supreme Court (Ansari, 2022).

Another shocking incident in which a teenager from Lower Dir Pakistan, under the extreme obsession of PUBG, killed his father and mother when they stopped him from playing the game (Utmanzai,

2023). In Pakistan, frequent cases have been reported by the media that due to extreme playing of PUBG, the young generation is taking highly risky steps, but there is a dearth of research studies to explore the causes of such behaviour in Pakistan. In contrast, other countries are exploring this phenomenon extensively from different angles. A wide-ranging meta-analysis by Burkhardt et al., (2022) examined studies for a large body of research and validated the relationship between playing violent video games and aggression. The American Psychological Association also recognised this relationship (Appelbaum et al. 2015).

After reviewing plenty of data, the American Psychological Association acknowledged the negative consequences of playing violent video games on aggression (Li, 2022). The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) (American Psychiatric Association, 2013) already lists the diagnostic criteria for Internet gaming disorder for these additional harmful effects of utilising online games; however, Elson et., (2019) criticised this for gross violations of academic objectivity on this issue. But the World Health Organization's 11th Revision of the International Classification of Diseases (ICD11), published in 2018, added the category of Gaming Disorder and raised awareness of the harmful consequences of gaming on health worldwide. This decision of WHO was also criticised by (Aarseth et al., 2017).

The above discussion shows that research on violent video games has produced a mixed bag of findings; some claimed that violent video games developed aggression and vice-versa. According to Cho et al. (2017) research, no discernible differences in aggressiveness levels among game genres existed. Another research conducted by Sferra et al. (2017) reported no correlation between playing shooting games and aggression. However, it has been noted that there is a statistically significant link between physical violence and shooting and fighting video games (Dickmeis and Roe, 2019).

Additionally, violent and competitive video games are positively connected with physical violence, according to the findings of (Dickmeis and Roe, 2019). According to Kaye and Bryce (2012), who focused on the poor social gaming dynamics in a game, unpleasant social interactions like other players abusing or swearing at you might make you feel frustrated and encourage aggressiveness. Battle royale is a new game type that is aggressive and competitive by nature, and its participants are prone

to becoming frustrated. Therefore, a further empirical study, especially from the Pakistani perspective, is needed to examine the relationship between playing PUBG and aggressive behaviour.

### Family Monitoring to Control Video Gaming

Parents are the primary gatekeepers for children and teenagers' access to media devices and materials, despite strict social interventions. With the growing difficulties parents face in controlling their children's media consumption at a time of rapid development of Internet-accessible technology and violent video games, understanding how family monitoring (involving, communicating and limiting time setting) to moderate in the real world relates to their use of playing violent games is extremely important (Vaala and Bleakley, 2015).

In Pakistan, parents are concerned about the influence violent entertainment has on adolescents due to cases reported daily to the media, such as those involving PUBG, a well-known violent video game, and its seriousness (APP, 2020). A case was reported that on January 19, 2022, a boy, namely Zain, took into custody after he allegedly killed his mother, brother and sister. Initial investigation of the case reveals that this boy is heavily obsessed with PUBG, and repeated defeats made him take extreme steps (Shahzad, 2022).

Although a few studies have looked at the impact of media-specific parenting techniques on children's Internet and Television use, they have mostly ignored the importance of the other aspects of media, such as violent video gaming, which caused aggressive behaviour (Livingstone et al., 2017). By simultaneously examining the relationships between aggressive behaviour, family monitoring and playing violent video games, i.e. PUBG, the current study aims to close this research gap. It also investigates whether family monitoring intervenes in the association between PUBG and aggressive behaviour among Pakistani Players.

There has been extensive research on family influence on children's development, and there is strong evidence linking family monitoring to children's exposure to violent media and antisocial behaviour (Sahithya et al., 2019). However, a small amount of research has been carried out, specifically looking at extremely violent video games, parental monitoring and aggressive behaviour.

Dishion and McMahon (1998) suggested that parental monitoring means paying attention to teenagers by monitoring their schedules, friends, interests, and activities. By maintaining a regular

eye on their lives, parents can support the healthy growth of their children while also demonstrating their engagement. Teenagers gradually participate in fewer risky and problematic activities as a result of it. Healthy behaviour, identity development, and a harmonious parent-adolescent connection are all favourably correlated with regular parental direction and engagement (Siu et al., 2016).

Moreover, during the adolescent stage, perceived social support is crucial to help adolescents deal with the issues and challenges they confront. Peer support helps teenagers cope with stressful situations by lessening their negative effects. It also helps them shift the meaning of the stressors and their emotional reactions to them. In addition to friends, teachers and parents are important sources of support for teenagers to avoid unhealthy activities (Yildirimand Zeren, 2021). A study conducted by Lukavska et al., (2020), discovered that the result of avoidance of harmful activities and video game addiction was only found in the children whose parents had active monitoring and imposed enough behavioural control.

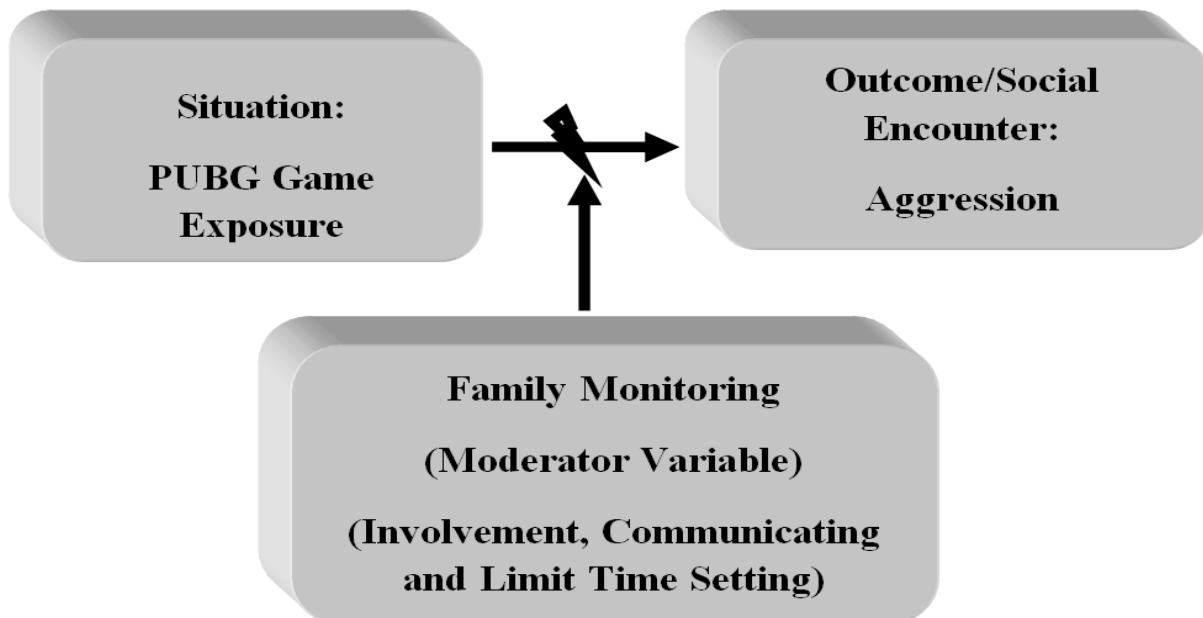
Along with many other factors, family monitoring is a significant contributor to adolescent video game excessive use. Parental supervision lowers the likelihood that children would engage in unhealthy hobbies like gaming addiction since parents are seen

as role models and have a beneficial influence on their children. A set of guidelines and recommendations make up parental guidance. Additionally, it entails instructing and counselling children as needed, defining right and wrong, and supervising everyday activities supporting their children's performance, most importantly (Vandermaas-Peeler and Way, 2018).

The above literature indicates that family monitoring is a primary gatekeeper to keep the children towards healthy activities, so a study in our context is important despite serious concerns amongst the parents' cases of PUBG-related incidents increasing daily. The purpose of this study and its potential outcomes is to close the gap in our understanding of how family monitoring affects PUBG Play and the development of aggressive behaviour. The following hypotheses will be tested in this study:

### Hypotheses

- It is more probable that significant positive correlation between playing PUBG and a higher level of aggressive behaviour.
- It is more likely that family monitoring moderates between PUBG playing and aggressive behaviour.



*Figure 1: A hypothesized model of family monitoring moderating the relation between PUBG Game exposure and aggression*

## Theoretical Framework

The Cultivation Theory, the Social Learning Theory, the General Arousal Theory, the Cognitive Neo Association Model of Aggression, and the General Aggression Model all assert that playing violent video games is associated with increased aggression (Egenfeldt-Nielsen et al. 2019). General Aggression Model is an important baseline for this study, as it is used in the current study to investigate how exposure to violent video games develops aggressive behaviour. Hopefully, it will guide us to a clear picture of whether the family monitoring moderates the players for thoughtful action and lessens the aggression among the gamers or otherwise.

## MATERIALS AND METHODS

### Sample

To investigate the effect of PUBG on aggressive behaviour and the parent's role in controlling the gameplay and aggression, we included a sample of 1000 Pakistani PUBG players for improved accuracy and in light of the country's increasing number of aggression cases. The study's objective was explained, and consent was acquired before data collection. Participants received assurance of secrecy and confidentiality.

### Study Tools

Study tool was designed in accordance with the guideline of past research and adoption of the Buss Perry Aggression Scale and Parental Monitoring Scale (PMS). Buss Perry Aggression Scale, a self-rating scale of aggression, is one of the standard questionnaires for measuring aggressive behaviour (Gerevich et al., 2007). This tool was adopted and modified according to the study design to measure aggression. Whereas family/parental monitoring was measured by adopting and modifying the tool Parental Monitoring Scale (PMS) developed by (Kerr and Stattin, 2000).

### Criteria

All men and women who:

1. Actively playing PUBG right now.
2. Have played them for three months or longer.
3. Play for an hour or more to meet the inclusion requirements.

### Study Variables

- Playing PUBG (Independent)
- Aggressive behaviour (Dependent)
- Family Monitoring (Moderator)

### Data Collection

After obtaining their informed consent, the participants were requested to complete the survey form. A five-point Likert scale questionnaire was launched through the Google Form link, and snowball sampling was used to obtain the data. It was posted in Facebook PUBG Groups and requested players to share it with their other PUBG-using friends. Obtained data were analysed statistically using the latest version of Statistical Package for Social Sciences (SPSS 22).

## RESULTS AND DISCUSSION

According to the respondents' profile, the majority of respondents (80.4%) were males (12.8%) were females, and (6.8%) were those who preferred not to say about their gender. Their age was (13.5%) under twelve years, (42.5%) were twelve to seventeen years, (32.4%) were eighteen to twenty-four years age, (9.4%) were twenty-

five to thirty-four years old, (2.1%) were thirty-five to forty-four years old, whereas (0.1%) was among forty-five years and above category (Table 1).

**Table 1:** Gender and Age characteristics of the responders (n=1000)

Variables	Frequency (%)
<b>Gender</b>	
Male	804 (80.4)
Female	128 (12.8)
Prefer not to say	68 (6.8)
<b>Age of the Respondents</b>	
Under 12 Years	135 (13.5)
12-17 Years old	425 (42.5)
18-24 Years old	324 (32.4)
25-34 Years old	94 (9.4)
35-44 Years old	21 (2.1)
45 Years & above	1 (0.1)

**Result of Hypothesis-1:** It is more probable that significant positive correlation between playing PUBG and a higher level of aggressive behaviour.

Pearson’s correlation analysis was performed to measure the direction and strength between variables. Table2 shows the association of the variables of the study.

Pearson Correlations		PUBG	Aggression
PUBG	Pearson Correlation	1	.140**
	Sig. (2-tailed)		.000
	N	1000	1000
Aggression	Pearson Correlation	.140**	1
	Sig. (2-tailed)	.000	
	N	1000	1000

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Table 2.** Test of the correlation in Hypothesis 1 about playing PUBG and a higher level of aggressive behaviour

Our hypothesis that a significant positive association between playing PUBG and more aggressive behaviour is supported by the acquired results validated by the findings, shown in (Table 2) for Pearson's correlation coefficient.

**Result of Hypothesis-2:** It is more likely that family monitoring moderates between PUBG playing and aggressive behaviour.

The moderating influence of family monitoring between PUBG playing and aggression was examined in SPSS using PROCESS. Table 3 summarises the moderation analysis. Family monitoring moderates the association

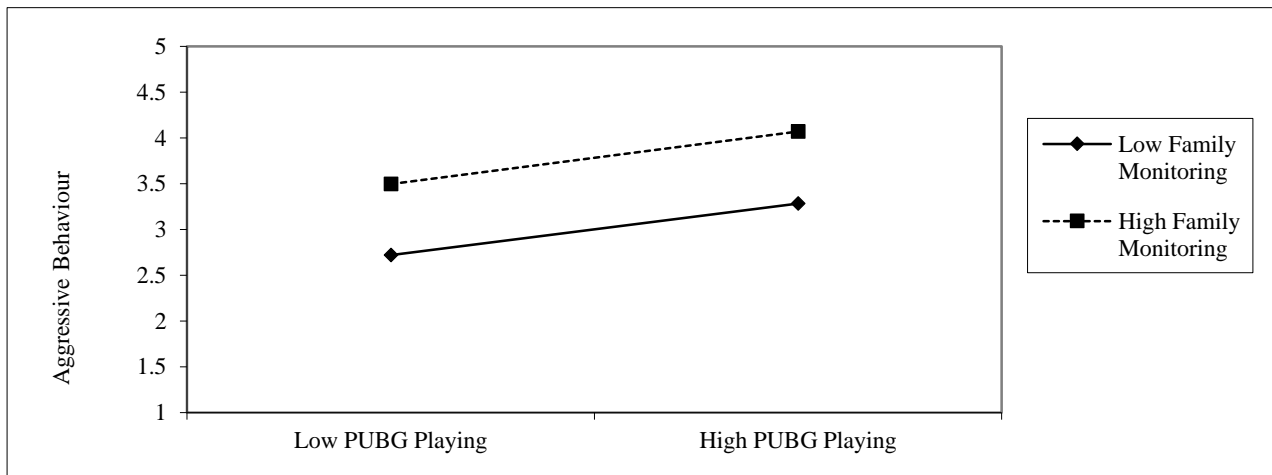


between PUBG playing and aggressive behaviour ( $b = -0.279, t = 3.331, p < 0.000$ ), validating our hypothesis. Our independent variable, PUBG Playing, accounts for 21% of aggressiveness variation. PUBG Playing has substantial conditional effects at values of the moderator family monitoring (P-value  $< 0.05$  at levels  $-3.3144, 0.000$ , and  $3.3144$  (SD, Mean, +SD)). In addition, Memoon (2018) lists the minor, medium, and large moderation impact sizes as 0.005, 0.01, and 0.025. Thus, our analysis shows family monitoring significant moderation moderates PUBG's link to aggression.

Moderation Analysis										
Relationship	R-sq	Beta	SE	Confidence Interval		F-Square Size	Conditional Effect	t-Statistics	P-Value	Conclusion
(PUBG*Family Monitoring) -> Aggression	0.2124	0.279 (0.000)	0.126 (.000)	Lower Bound .6836	Upper Bound .8825	.0624	-3.3144 3.3144	-3.331	.000	Significant Moderation

Note SE: Standard Error, (LP Lower Presence, AP: Average Presence & FP: Full Presence) \*\*\*  $P \leq .001$

**Table 3:** Moderation Analysis of (PUBG, Family Monitoring and Aggression)



**Figure 2:** Slope Analysis of moderation

Playing PUBG (Independent), aggressive behaviour (Dependent) and Family Monitoring (Moderator) were analysed in the research through moderation analysis. The slope of this aspect is presented in the above graph, which shows little interaction between Playing PUBG and family monitoring. Our graph shows the main effect between Low and High PUBG Playing and low family monitoring and high family monitoring exist. The analysis shows that the results are significant. Slope analysis further indicates that family monitoring as moderation is

practical for players playing PUBG at a low level. However, although this moderation works on high usage of playing PUBG, they are more likely to develop aggressive behaviour.

**Discussion**

In the present study, the characteristics of the respondents show that the majority were male, and the aged from twelve to seventeen years are among the majority of the age segmentation who played PUBG.

As far as the result of this study is concerned, our understanding of the problem of aggressive behaviour linked to exposure to violent media was expanded by the current study. The findings of our study supported our hypotheses that there is a significant positive correlation between playing PUBG and a higher level of aggressive behaviour. It was discovered that playing PUBG, a violent video game, was positively connected with aggressive behaviour. In the current study, when the linkage between PUBG playing and aggression was explored, it has been found that the results are significant. This analysis was performed through the Pearson correlation analysis, showing a strong significant association. This result is totally in line with the previous studies conducted worldwide that PUBG playing has a strong negative effect and develops aggressive behaviour (Alzaharani et al., 2017; Amin, 2020; Mamun et al., 2020; Mamun and Griffiths, 2019; Shahzad, 2022; Ansari, 2022; Egenfeldt-Nielsen et al. 2019; Dickmeis and Roe, 2019).

Violent video game exposure (VVG) has been linked to increased aggression in people, according to a large body of studies. However, some studies have looked at parental interventions in preventing violence and playing violent video games (Vaala and Bleakley, 2015; Livingstone et al., 2017). In our study, the respondents explored the moderating role of family monitoring between PUBG playing and aggression, and the data was processed through SPSS PROCESS. In the Pakistani context, the results are also found to be significant. Family monitoring moderates the association between PUBG playing and aggressive behaviour, authenticating our hypothesis. The current research study's findings were proportional to the earlier studies (Vaala and Bleakley, 2015; Livingstone et al., 2017; Sahithya et al., 2019; Siu et al., 2016; Yildirim and Zeren, 2021; Vandermaas-Peeler and Way, 2018).

Moreover, the slope analysis indicates that the effect of family monitoring in controlling the PUBG and aggressive behaviour is working on the light users of PUBG, whereas the heavy users deviate from this monitoring and become more aggressive.

### Limitations

The study's biggest limitation was the self-report approach used in this study, whereas if the other exploratory methods were applied, it would be more interesting, so future researchers should consider

other methods to incorporate into their studies. Another limitation of the study was family monitoring was assessed by the PUBG users; if there is a mechanism adopted in which their parents were approached to ask about their intervention style and other ways to control the excessive gaming and aggressive behaviour, it can give a more clear picture.

### Conclusion

The results of the current study demonstrated a positive relationship between aggression and exposure to PUBG. As indicated in previous research, exposure to violent video gaming leads towards developing aggressive behaviour; the result of this study is also in line with the previous research. Family monitoring between PUBG Playing and Aggressive behaviour is also positive, as significant moderation exists. Our study suggested that family supervision moderates between PUBG and aggressive behaviour for light users, while heavy users develop aggressive behaviour despite family monitoring.

### Recommendations

The usage of online violent video gaming is growing rapidly in Pakistan; therefore, the current study can assist in identifying the negative effects that this troublesome practice is having on people. Playing video games online can be a kind of relaxation, but violent games, especially the use of excessive PUBG to the point that it develops antisocial behaviour, need the stakeholders' immediate attention. Additionally, the study concentrated on the factor of family monitoring that influences playing PUBG and aggression, so family members, along with communicating and limiting time setting, should also consider providing healthy outdoor activities for the children. Furthermore, educational institutions can host awareness sessions on problematic unhealthy aggressive behaviour patterns and educate parents and children on how to deal with excessive gaming use before it develops a problem for the user.

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