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The Prevalence of Internet Gaming Disorder Among Adolescents in Selected Private Christian Universities in Nairobi County, Kenya

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Abstract

Internet Gaming Disorder (IGD) is now a prominent mental health issue that most often affects adolescents. There are several negative consequences of IGD, such as psychological distress and decline in social functioning. This study sought to determine the prevalence of internet gaming disorder among adolescents in selected private Christian universities in Nairobi County, Kenya. The study adopted a quasi-experimental research design, and participants were 584 students from four different private Christian universities. The researcher administered the Gaming Disorder Scale for Adolescents (GADIS-A) tool to measure the prevalence of IGD among the participants, who included late adolescents between the ages of 18 and 21 years. Data was analyzed using descriptive statistics, including frequencies and percentages. The findings indicated that 34.2% of the participants who were screened for Internet Gaming Disorder met the diagnostic criteria for IGD. This implies that about 34.2% of students aged 18-21 years and studying in selected private Christian universities exhibited internet gaming disorder. This study shows a significant prevalence of IGD among adolescents in the selected private Christian universities in Nairobi County. Therefore, this is a significant concern within adolescents in a university setting. IGD h**as** adverse impacts on social lives, psychological well-being (distress), and academic performance. The finding highlights the necessity for creating more awareness, intervention approaches, and support systems within these universities to address IGD.

Keywords: *Prevalence of Internet Gaming Disorder, Adolescents, Private Christian Universities*

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1. Introduction

Internet Gaming Disorder (IGD) is acquired through persistent and regular use of video games and often leads to the immersion of academic or professional tasks. IGD is a relatively new and tentative diagnosis of a psychiatric disorder that is on the rise as more academics look at related online video games and addictive behaviors. It can be considered a relatively recent phenomenon, which has recently attracted much attention mainly because of its detrimental impact on the well-being of teenagers. This condition arises from the development of technology as well as the changing trends in video games; therefore, it is a formidable challenge to those in the health fields, those teaching, and policy makers (Darvesh et al., 2020). IGD

presents neuroanatomical and neurofunctional abnormalities, particularly in reward, motivation, and executive system areas that lead to compulsive gaming and loss of cognitive self-control (Brand et al., 2019). One reason is that gamers have a hard time leaving this game because they are rewarded.

Furthermore, the anticipation of this sort of reward may boost dopamine 'happy hormone' in the brain, and provoke the reward system. The moment a player is rewarded, he/she may easily become addicted at long last. According to neuroimaging studies, people with IGD have alterations in their prefrontal cortex and striatum that are related to decreased impulse control and increased reward sensitivity (Palaus et al., 2017). Gaming is a process that encompasses the use of computers, consoles, handheld gadgets, mobile devices, and gaming machines. This ranges from action games, adventure, role play, simulation, strategy, and sports (Peleczna, 2022). There a single-player game, multiplayer game and massively multiplayer online (MMO) game types of games (Ortiz de Gortari & Gackenbach, 2021). Types of gaming platforms are PCs and laptops, consoles, smartphones, tablets, and arcade machines (Entertainment Software Association, 2020).

Gaming communities are, in most cases, designed on social media platforms, for instance, Discord, which acts as a hub for gamers to connect. Thus, esports refer to professional competitive gaming at the uppermost level (Sjöblom & Hamari, 2020). Controls involve interactions and display, or more specifically, controls as part of the game elements that define the game mechanics, these are elements that affect the game design and form the reward system (Khaliledin & Miel, 2011). Psychological characteristics include achievement, social, and immersion incentives, as well as vices like addiction, social alienation, and health complications (Gupta et al., 2024). Though recent studies have shown that gaming might have other advantages, such as better working memory, reduced stress level, and social belongingness (Markey et al., 2020). That is why it is relevant to understand these components to help treat the Internet Gaming Disorder (IGD), which is characterized as a negative impact of gaming on one's life and which results in avoiding responsibilities and withdrawal symptoms (APA, 2013).

Adolescents with IGD present clinical characteristics like those found in other psychiatric disorders, including preoccupation with online video games, an increased need to spend more time in online video games, uncomfortable feelings when playing internet games, and inability to control playing internet games, according to Dieris et al. (2021). Almutairi et al. (2023) also pointed out that Internet Gaming Disorder (IGD) is a condition in which patients spend excessive time on internet games, triggering specific brain pathways in a manner equivalent to that of narcotic addiction. IGD has therefore emerged as a significant cross-cutting issue among adolescents across the world, including Nairobi County, Kenya. The increased use of internet-connected devices has also been found to contribute to the rise of problematic gaming within this group, alongside the availability of online gaming solutions (Nyaga et al., 2020). Minimizing self-care and self-regulation behaviors in students and adolescents with IGD can lead to several negative social and psychological impacts.

Chatterjee et al. (2019) have stipulated that psychosocial therapies and CBT should be interventions for IGD. However, according to Zajak et al. (2020), studies on the treatment of IGD are still in their infancy, and more effective treatments are yet to be developed. Due to the downsides of IGD rising in response to this problem, MET has been considered as working towards giving people treatments that will make the impacts of IGD less severe. According to Weaver (2019), Motivational Enhancement Therapy (MET) means enhancing the patient's

mental processes with the help of motivational interviewing and using interview questions only to strengthen the patient's motivating words. Motivating people to investigate and overcome their ambivalence about changing their behaviour is the main goal of MET (Dieris et al., 2021).

Since typical therapy techniques may not fully address the motivational deficiencies and ambivalence that are common in IGD patients, MET might be a viable intervention option. MET seeks to increase an individual's inherent drive to alter maladaptive habits by resolving uncertainty, establishing personalized objectives, and reinforcing commitment to change (Dieris et al., 2021). By concentrating on motivational components, MET could successfully assist adolescents with IGD in recognizing the negative effects of their gaming behaviours, improving their readiness to change, and adopting healthier behaviors. Although MET has demonstrated potential in treating a variety of addictive behaviors, a gap exists in its usefulness in the context of IGD among adolescents in Nairobi County; hence, the need for this study.

1.1 Problem Statement

Independent Christian universities present unique challenges to adolescents during their stay. Students experience academic stress and social anxiety as well as having newly discovered freedom, which leads most of them to exhibit risky behavioural coping styles, which may result in IGD. IGD is experienced by ten percent of university students globally (Wartberg et al., 2020). IGD among adolescents raises critical academic, social, and mental health issues worldwide (Zajac et al., 2020). Past research has established the rate and antecedents of IGD (Severo et al., 2020; Stevens et al., 2021). Pontez et al. (2021) pointed out that, as per WHO, regarding IGD overall prevalence ranged from 1.5% to 35.7%, and there is an increased difference in male participants.

In East Africa, for example, a study by Munyeti and Ojuade (2022) found 57.1% of young people with IGD. According to Micheni and Muketha (2019), the adolescents' IGD rate in Kenya was at 23.6% among school-going individuals. IGD is also correlated with such risk factors as social anxiety disorder and depressive disorders (Pontez et al., 2021). The following are the negative impacts of IGD on young students: poor academic performance due to absenteeism from class, as well as a lack of concentration in class, and detrimental performance due to excessive preoccupation with internet gaming. Social relations erode when learners become more selfish and ignore friendships by choosing to game instead. In addition, IGD is related to increasing the risk of having anxiety, depression, and sleeping difficulties, as mentioned by King et al. (2020).

Previous research concerning probable treatment for IGD has proposed pharmacotherapy, CBT, and psychosocial therapies. Nevertheless, as observed by Zajak et al. (2020), the treatment strategies and interventionist treatment approaches for IGD are still in their premature stages, with no definite and efficient treatment procedures developed yet. Young patients with IGD may have a low level of motivation during the commencement of treatment, and the range of aggressive therapeutic procedures and/or CBT may compromise their applicability in treating IGD. Also, there is a reluctance to take conventional therapeutic techniques among adolescents. Nevertheless, despite the increased concern over the negative effects of IGD, there is a lack of enough studies investigating the prevalence of IGD among university students, more so within the unique environment of private Christian universities in Nairobi County. The prevalence of IGD in this specific demographic remains unknown, potentially differing from both high school and general East African populations. This study was therefore necessitated by the need to provide empirical evidence on the prevalence of IGD in this under-researched

population, which can inform the development of targeted interventions, MET, and other support services within these universities.

2. Literature Review

2.1 Theoretical Review

Biopsychosocial Model of Addiction is an extensive model that focuses on the reciprocal processor interplay of the biochemical, emotive, and sociological interventions in addictive comportment. It was founded by George Engel, an American psychiatrist, in 1977. He introduced this notion as a shift from the substantive biomedical model, which was founded on biological ingredients in endeavoring to define and manage health and illness. It points out that addiction is in part determined by both neurochemical factors such as genetic influences, neurochemical problems, or biochemical differences; and psychosocial factors that include thinking processes, feelings, ways of handling issues, and the social relations and environment one grows up in, peers, and culture one lives in according to Engel (1981).

This paradigm postulates that addiction is a multiaxial disturbance resulting from the dynamics of biopsychosocial factors of susceptibility, psychological factors of susceptibility, and environmental factors. That is why culturally relevant personality and lifestyle factors should all be included in addiction assessment, as well as in prevention and treatment planning (Skewes & Gonzalez, 2013). In this study, the model acknowledges the fact that social work is partly precipitated by genetic factors and neurological processes in the addict. Like other behavioral addictions, IGD has a complex neurobiological structure. One of the body's major constituents of these mechanisms is the limbic system, which is involved in the regulation of affect, reinforcement, and conditioning of drug-seeking behaviours. That includes the amygdala, the hippocampus, the nucleus accumbent, and the Ventral Tegmental Area (VTA). The VTA and nucleus accumbent are squarely in the brain's reward pathway; they are responsible for the release of dopamine. In people with IGD, this reward system becomes dysfunctional, which is why the gamers keep playing even at the cost of their health. Prolonged use of gaming increases the levels of dopamine produced in preparation for gaming stimuli, which helps in maintaining the behaviour, hence compulsive gaming (White & Koob, 2020). Also, the prefrontal cortex, responsible for decision-making, impulse control, and other executive workings of the brain, gets connected with the system. Hypothesized, the adolescents with IGD may demonstrate changes in connectivity between the prefrontal cortex and limbic system, which results in the ability to apply judgment and resistance to short-term rewards over long-term consequences (Sun et al., 2023). Such structural and functional changes, particularly increased connections between the prefrontal areas and the limbic system, make the compulsive behavior felt in gaming addiction even worse. It was found that cogitative structural neuroimaging of people considering IGD demonstrated that manipulated cognition signified costs arranged in areas assigned with reward and authoritative control (Gupta et al., 2024). These neurobiological changes show that the limbic system contributes to the initiation and perpetration of IGD. Knowledge of these mechanisms is important for the identification of potential possibilities of therapeutic regulation, for example, suppression of addictive behaviors through restoration of the interconnection between the prefrontal zone and the limbic system. The idea bears in mind that cognition, feeling, and adaptive mechanisms represent core aspects of addiction. It means that psychological variables that affect behavior in IGD include Cognitive distortions, which relate to beliefs about the value of rewards; coping via gaming to escape bad feelings; and lack of self-control.

According to the theory, the addiction process is determined by social context and social relations, and the role of environmental variables. In the case of IGD, peer pressure, parenting style, family conflict, and communication, norms on gaming behavior and easy access to gaming technology influence adolescents and can affect the participation of those with IGD in treatment programmes such as MET. The Biopsychosocial model provides for the nature of therapy for addiction by attending to the biological, psychological, and social aspects of the patients. Knowledge of this model in the context of the study may inform effective MET to address individual organism predispositions through biological therapies, cognitive restructuring, and or emotional regulation skills, and social environment, including family and peer influences, in MET-motivated patients to change and recover from IGD.

Strengths and Weaknesses of the Biopsychosocial Model of Addiction.

Biopsychosocial model of addiction involves the integration of biological, psychological, and social aspects to address the issue of IGD. An advantage of this model is that it is integrative in nature or holistic in design, according to Skewes and Gonzalez (2013). The model is also a useful framework in understanding IGD since the numerous loops interacting between genetic factors, neurobiological response, psychological state, and social environment are well captured. This perspective is relevant to this study because it acknowledges that IGD in teenagers is beyond the gaming behaviours, but a multidimensional index. This makes it easier to build individualized treatments that could respond to several angles of the condition, successful treatment, and thus improve chances of favorable treatment results.

Other advantages of the model include individual approach to the patient. Since addiction is treated as a condition responding to certain biological and psychological, and social factors, this model supports precise therapies. In this research study, it means that MET may be delivered according to the needs of the individual teenager, respecting their cultural and developmental need. This kind of consideration can increase the probability of intervention on IGD since it considers the multiple ways through which teenagers experience or react towards the issue. This paradigm allows the relative involvement of families and communities in the therapeutic process that is so crucial for stabilizing the patient's condition (Dailey et al., 2020).

The model is not without some weaknesses regarding its application to this study. It has one very major disadvantage: being complex. The interaction of those biological, psychological, and social factors might influence the main contributions to IGD and might complicate the planning and implementation. For instance, in this study, the fact that the model involves multiple dimensions may pose a very big challenge in terms of implementation. Thus, it requires a lot of resources and interprofessional skills to address all the typical problems. This can elevate treatment complexity to become a challenge when opening an attempt at standardize treatment regimens since customers' needs may differ, and methods should be adjusted; this may affect comparability, which could be the source of variability in Miles' (2020) study. However, since the model integrates a variety of components, it can be quite vague as to how each component is used. It can render therapy plans vague and even too general; therefore, it does not work to live up to different adversities. In this study, while MET aims at enhancing the desire to change, BSM's identifications of a host of potential antecedents to IGD may water down the intervention. If not controlled, this might lead to less focused and less effective consequences. In addition, the global perspective of the model might hinder assessment of required and achieved outcomes of distinct interventions because it could be complicated to identify the effects that are connected with concrete components of the presented framework (Miles, 2020).

Despite offering a clear model through which to examine addictions in general, and IGD in particular, it has been met with a great deal of criticism and its limitations. Several components featured in the model can sometimes reduce the specificity in the way mechanisms underlying substance dependence are understood. There are also some limitations of the model As Dailey et al (2020) and Miles (2020) pointed out, the Biopsychosocial Model of behavior change includes a variety of components that are not easily implementable in research and clinical practice because the interactions between the components are complex A need arises therefore for another theory which is a bit more specific and structured than the Biopsychosocial Model for behavior change and which targets behaviors.

2.2 Empirical Review

2.2.1 Prevalence of IGD Among Adolescents

IGD is gradually emerging as a formidable disorder in several civilizations, most notably among adolescents who use computer games. Various authors tried to describe the prevalence and occurrence of GD and related difficulties, and their work included the teams from Europe and Asia (Stevens et al., 2021). Available literature on the prevalence of IGD has been a contrast with many of the research gaps. Studies show that from 1998 to 2016, the IGD frequency was between 0.7% and 15.6% according to the data presented by Feng et al. Some studies for determining the prevalence ranged from 1%- 2%, while others ranged from 15% (Stevens et al., 2020). The incidence of GD also varied by age and region: in 8.5% of adolescents aged 8-18 in the USA, in 5.4% of respondents aged 13-40 in the Netherlands, in 1.2% of German adolescents aged 13-18 and in 5.9% of South Korean adolescents aged 13-15 (Kim et al., 2022).

Ferguson et al. (2018) in their meta-synthesis of data from several works, ascertained that the average incidence of IGD among adolescents was between 5% 10%. The study concentrated on the differences in occurrence frequency by countries or regions and noted that it does not support IGD on all scales worldwide. Nevertheless, rates vary significantly within different countries and districts of the world, and some of them have higher rates than others. In another cross-sectional research that was conducted in adolescents in South Korea, China, and Japan, IGD was found to be more prevalent among adolescents. In the previous global GD efficacies, Mihara and Higuchi (2017) reviewed 50 cross-sectional and longitudinal studies, indicating that the rate of IGD was 0.7 to 27.5%. A meta-analysis of 27 pieces of research was conducted, and most of the research was done on school-age children by Feng et al. (2017), the prevalence range was between 0.7 to 15.6 % in the period between 1998 and 2016. The overall prevalence shown in a comprehensive analysis conducted on GD in children and adolescents increased the IGD prevalence range between 0.60% to 50.00% (Paulus et al., 2018). The global meta-analysis of adolescent IGD presents the overall prevalence estimate of IGD as 4.6%, with 16 individual studies and 6.8% for boys (Fam, 2018). The same authors found a 14.5 % prevalence rate among adolescents aged 12-18 years; therefore, the region has a relatively high gamer population. South Korea has been quite famous for its rich gaming culture integral to its people's lives, and this research has helped in unveiling most of the effects of cultural factors on IGD prevalence.

Studies show that IGD rates differ according to geographical location and age. Ferguson et al. (2019) put up a meta-analysis, and the hypothesis shows prevalence rate among adolescents was 0.7 – 27.5%, with a high percentage in Asian countries like South Korea and China. Such differences can only narrow down the actual prevalence rates found in each location and or

population group, and thus, Gentile et al. (2017) established reduced prevalence rates in the European and the North American region; hence, possible cultural and geographical differences may define gaming behaviors and disease manifestation. A recent meta-analysis comparing the prevalence of Internet addiction and IGD reported a weighted mean prevalence of IGD equal to 2.47% with 17 studies included, and 3.38% among a representative sample of 10 studies included in the meta-analysis (Pan et al., 2020). A meta-analysis of eight Southeast Asian studies means GD prevalence is 10.1%. These differences in estimates across studies may be due to a shift in the approach and participants enrolled in research and analysis (González-Bueso et al., 2018; King et al., 2020).

IGD Prevalence in North America and Europe is slightly lower than that in the Asia Pacific region but comparable to that in adolescents. King et al 2020 report on IGD problems as relating worldwide, stating the prevalence rate in the United States in adolescents between the ages of 13-18 years is at 8.6%. Even though the incidence estimates were lower than in some Asian countries, IGD problems represented the international nature of IGD issues and a need for research and interventions in diverse cultures. Variability of prevalence of IGD amongst youth across the Middle East and Africa, from cross-sectional research. Kurt et al. (2021) state that due to the absence of data from some of these nations, there are expanding concerns with respect to the rates of IGD among Middle Eastern children and adolescents, as outlined by Almarashdeh et al. (2021) on Saudi Arabian youngsters. Concerning the findings of the study, new questions arose, prompting further IGD exploration among adolescents in this area. Despite the lack of many empirical studies on the prevalence of IGD in Latin America and the Caribbean, it can be recognized that the problem is gaining increased attention. Brazilian sample and Duarte-Guerra et al (2019) specify that more comprehensive studies identifying IGD prevalence and connected factors should be conducted in this part of South America. It stressed the need to seek further information on the region, considering that IGD was beginning to be recognized as a public health issue.

3. Methodology

The study adopted a quasi-experimental research design, and participants were 584 students from four different private Christian universities. The researcher administered the Gaming Disorder Scale for Adolescents (GADIS-A) tool to measure the prevalence of IGD among the participants, who included late adolescents between the ages of 18 and 21 years. Data was analyzed using descriptive statistics, including frequencies and percentages.

4. Results and Discussion

4.1 The Prevalence of IGD among the Participants

The objective of this study was to determine the prevalence of internet gaming disorder among adolescents in selected private Christian universities in Nairobi County, Kenya. 584 participants were screened for IGD using GADIS A. Out of the 584 participants, 200 participants met the criteria for IGD (GADIS-A total score>16). Therefore, prevalence was calculated as follows:

$$\text{Prevalence of IGD} = \frac{\text{Number of Participants who met criteria for IGD}}{\text{Total number of Participants Screened}} \times 100$$

$$= \frac{200}{584} \times 100$$

$$= 34.2\%$$

This means that 34.2% of the participants who were screened for Internet Gaming Disorder met the diagnostic criteria for IGD. This study established that the prevalence of IGD among adolescents in selected private Christian universities in Kenya was higher (34.2%) compared to other countries and regions. The incidence of IGD was 8.5% among adolescents in the USA, 1.2% among adolescents in Germany, and 5.9% among adolescents in South Korea aged 13-15 (Kim et al., 2022). A study by Ferguson et al. (2019) illustrated that IGD rates differ according to geographical location. The study put up a meta-analysis, and the hypothesis shows prevalence rate among adolescents was 0.7 – 27.5%, with a high percentage in Asian countries like South Korea and China. Further, a meta-analysis of eight Southeast Asian studies means GD prevalence is 10.1%. These differences in estimates across studies may be due to a shift in the approach and participants enrolled in research and analysis (González-Bueso et al., 2018; King et al., 2020).

5. Conclusion

This study shows a significant prevalence of IGD (34.2%) among adolescents in the selected private Christian universities in Nairobi County. Therefore, this is a significant concern within adolescents in a university setting. IGD h**as** adverse impacts on social lives, psychological well-being (distress), and academic performance. The finding highlights the necessity for creating more awareness, intervention approaches, and support systems within these universities to address IGD.

6. Recommendations

The study recommends the need to make awareness and education on IG easily available. The implementation of awareness campaigns as well as educational programs for students, their parents, and faculty through the psychology department. University counseling Centers are encouraged to assist in screening students to identify students who are prone to, as well as those experiencing, Internet Gaming Disorder. Universities could consider introducing policies and guidelines related to responsible technology use. Further research to explore the factors contributing to IGD in university students.

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