

## A Scoping Review About The Portrayal of Mental Illness in Commercial Video Games

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## **A Scoping Review About The Portrayal of Mental Illness in Commercial Video Games**

### **Abstract**

Current research is sparse on the relatively new but highly relevant topic of mental disorders in video games. This scoping review aimed to map the existing research on portrayal of mental illness in video games. PubMed, PsychInfo, PsycArticles, Medline, Scopus and the ACM Digital Library were searched, resulting in the final inclusion of seven records. Prevalences for the representation of mental illness ranged from 12% to 24%. Findings indicate that video games' portrayal of mental illness is predominantly stigmatising and negatively connoted. Mental illness frequently serves as a reason for violent behaviour and is portrayed in line with paranormal experiences. Yet, some games portray mental illness in a more neutral way, using game mechanics to elicit empathy. While this review emphasises the need for non-stigmatising depiction, potentially through the inclusion of experts in the developmental process, future research should examine how much consumers are affected by portrayal in video games.

*Keywords:* mental health; mental disorder; media representation; computer games; digital games

## A Scoping Review About The Portrayal of Mental Illness in Commercial Video Games

### Introduction

Media representation can influence consumers in their views about various topics, including mental illnesses (Dietrich et al., 2006). Negative portrayal can lead to negative opinions about mental disorders for both those who do not and those who do experience mental illnesses themselves (Corrigan & Kleinlein, 2005). There has been considerable research on portrayal of illness in media like movies or TV series. For example, mental illnesses have often been depicted to explain criminal behaviour in TV content (Diefenbach & West, 2007) and newspaper coverage (Wahl, 2003). Fictional characters with mental disorders are often the aggressive antagonists, even in children's shows (Wahl et al., 2007). Research has shown that mainstream media coverage about mental disorders has increased, which might lead to more awareness, but still exhibits stigmatising and stereotypical portrayal (Dean & Nordahl-Hansen, 2022; Kimmerle & Cress, 2013; Mittmann et al., 2023).

One of the newer but highly relevant mainstream media is video games. Video games have become a widespread leisure activity with increasingly younger target groups (Mittmann et al., 2022). In 2023, there are 1.93 billion players using mobile games, 1.22 billion playing download games and 1.13 billion playing online games (Clement, 2023a), with players spending up to 12.39 hours weekly on games (Clement, 2023b).

Considering the influence of mainstream media on attitudes of a general population and the high amount of video game players, the investigation on video games seems warranted. Research on the influence of violent video games on violent behaviour and other aspects of personality has had a huge discourse both in the scientific literature and the general population. Despite a vast number of studies on the topic of violent video games, results are still not conclusive. Recent research suggests that playing violent games does not contribute to violence against people but may lead to increased destructive behaviour (Suziedelyte, 2021). Accordingly, Lengersdorff et al. (2023) found that playing violent video games does not numb empathy to real-world violence.

While mental health has been a prominent topic in the scientific literature around video games, most of this research relates to how video games affect the player's mental health and how video gaming can lead to addiction. Limone et al. (2023) estimate the prevalence of gaming addiction with about 5%. Addictive gaming behaviour is characterised by "above-average time on gaming, doing most of the gaming online and gaming activities interfering with sleep patterns" (Limone et al., 2023, p. 1).

In terms of portrayals in video games, recent research found that stereotypic and objectifying portrayal of female characters in video games negatively affects female body image and self-efficacy, as well as results in sexist attitudes' acceptance of social rape myths in men (Gestos et al., 2018). Discriminating portrayal of race can also result in misjudgement and prejudice of all members of a race (Dill & Burgess, 2013). Similarly, Yang et al. (2014) found that "people who play violent video games as violent Black characters are more likely to believe that Blacks are violent" (p.6).

### **The Current Study**

While the literature reinforces the high influence that mainstream media might have on the general population, research on the influence of video games and mental health mostly relates to addiction. In terms of content, there has been a long discussion around the influence of violence in video games, which has yielded contradicting results. Little research can be found regarding views and awareness about mental disorders through video games. Therefore, this scoping review aims to map the existing research on portrayal of mental illness in video games.

## **Methods**

### **Data Sources And Search Strategy**

For our primary search, we included the databases PubMed, PsychInfo, PsycArticles, Medline, Scopus and the ACM Digital Library. This ensured to cover relevant databases from both psychology and psychiatry, medicine and computer science.

Our search string for the primary search was "(video games OR computer games OR online games) AND (mental health OR mental illness) AND (portrayal OR representation OR depiction)". We did not restrict the time frame of research.

For a secondary search, reference lists of all included studies were scanned for additional records. If any new references were found, their reference lists were screened as well. We additionally searched Google Scholar with various search terms combining video games, mental illness and media portrayal. All records were imported to EndNote 20. Duplicate records were removed using the software's built-in option.

Two of the authors independently screened all records on title and abstract level. Reviewer agreement was 100%. Full-text articles were screened by both reviewers. Agreement between the two reviewers was reached through discussion for records where one of them was unsure.

## Eligibility Criteria and Data Characterisation

Table 1 outlines the eligibility criteria. All selected articles focused on the portrayal of mental illness in commercial digital games. For each included article, characteristics were gathered and summarised in an Excel spreadsheet. These details encompassed general characteristics (authors, title, year, country of origin), types of video games, specific game features (e.g. particular samples), study details (methods, analysis), and findings regarding portrayal.

**Table 1**

### *Eligibility Criteria*

	Inclusion criterium	Exclusion criterium
Study design / outcome	Original research: Any information regarding the representation of mental illness	Literature reviews, opinion pieces, book chapters
Variable of interest	Portrayal of mental illness	Portrayal of other illnesses, substance abuse, addiction
Media type	Any form of commercial digital games	Non-commercial games, non-digital games
Publication language	English, German	Any other language

## Results

### Characteristics of Included Records

The search was carried out on 10th October 2023, and the entire selection process is detailed in the flow chart (Figure 1). Seven records fulfilled the inclusion criteria, spanning publication years from 2016 to 2023, with a predominant focus on studies conducted in the United States. Table 2 provides a comprehensive overview of the included studies. Given the heterogeneity among these records, this paper will initially provide a narrative summary of each included record before synthesizing pertinent information on portrayal.

**Table 2**

### *Summary of included records*

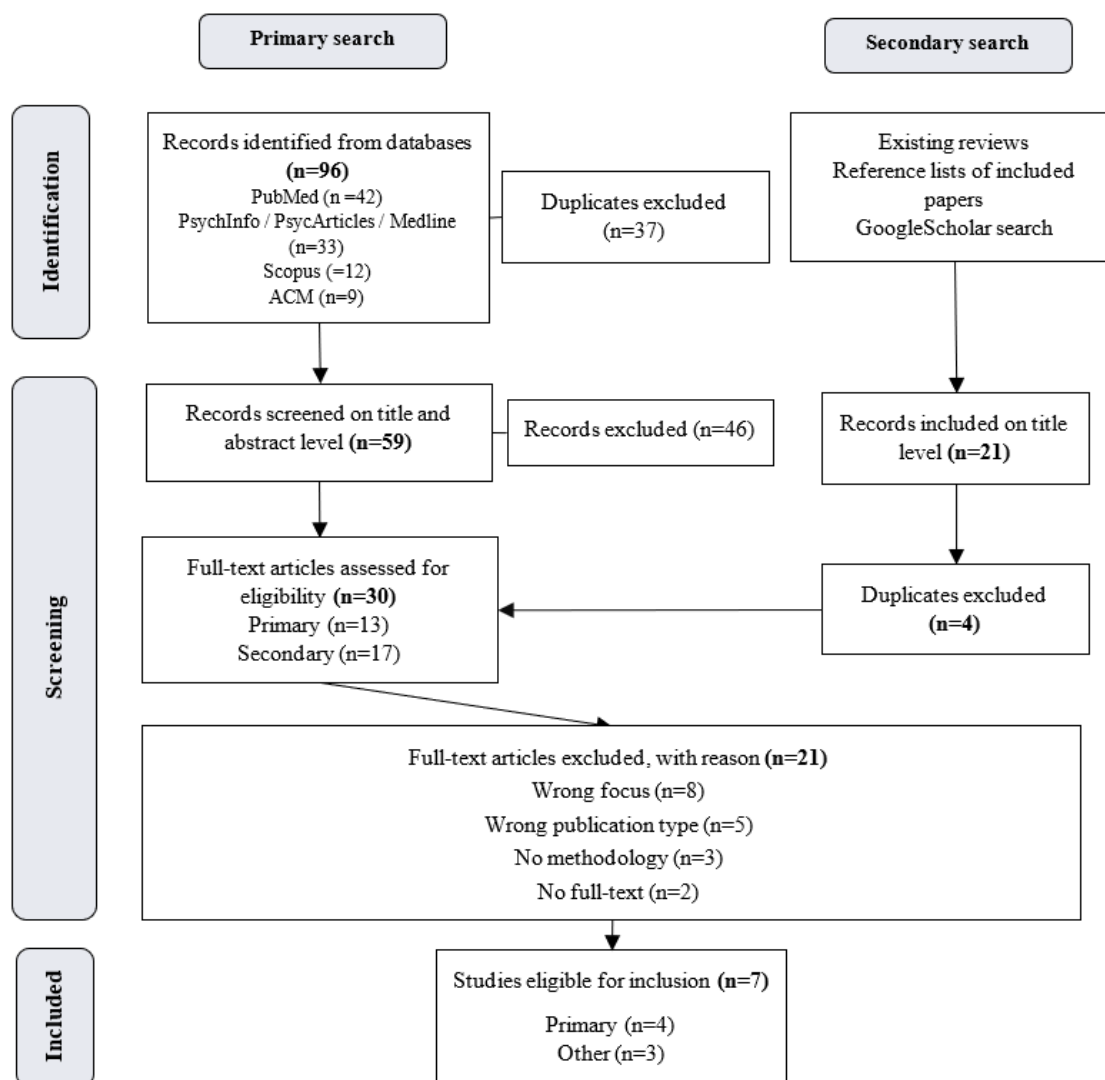
Reference	Country	Title	Sample	Main findings
Shapiro & Rotter (2016)	US	Graphic Depictions: Portrayals of Mental Illness in Video Games	23 video games from 2011 to 2013	Depictions most commonly linking mental illness to dangerous and violent behaviours

Ferrari et al. (2019)	US	Gaming With Stigma: Analysis of Messages About Mental Illnesses in Video Games	100 games from 2016 to 2017	Depictions perpetuate well-known stereotypes and prejudices: violent, scary, insane, abnormal, incapable, unlikely to get well, isolated and fearful
Fordham & Ball. (2019)	US	Framing Mental Health Within Digital Games: An Exploratory Case Study of Hellblade	1 video game	The use of technologies such as motion capture and binaural sound recordings can elicit an empathetic experience, which helps destigmatise mental health
Anderson (2020)	US	Portraying Mental Illness in Video Games: Exploratory Case Studies for Improving Interactive Depictions	3 video games	Depiction as a horror-filled experience that inevitably leads to suicide. But mental illness can be shown as a challenge that can be faced, treated, and, in some cases, improved.
Scholte & Major (2021)	CH	Playing with mental issues—Entertaining video games as a means for mental health education?	4 video games	Depictions are gloomy, dark game worlds set the stage for the main player characters' painful fight or ordeal. Theories of collaboration and interdependence are not successfully translated into the analysed video games
Buday et al (2022)	CZ / SK	Depiction of mental illness and psychiatry in popular video games over the last 20 years	54 video games from 2002 to 2021	Depiction mostly negative, e.g. violent, dangerous.
Kasdorf (2023)	DE	Representation of mental illness in video games beyond stigmatization	16 video games from 2018 to 2019	Only two characters had in-depth characterisation, but those two lack any stigmatisation, possibly due to expertise of developers.

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**Figure 1**

### Flowchart of The Screening Process



### Narrative Summary

#### *Shapiro and Rotter (2016): Graphic Depictions: Portrayals of Mental Illness in Video Games*

Shapiro and Rotter (2016) used the framework of Hyler, Gabbard and Scheider (Hyler et al., 1991), who proposed six predominant stereotypes of mental illness in cinema, to analyse the 50 most selling games of each year between 2011 and 2013. Shapiro and Rotter (2016) found that 23 of 96 surveyed games depicted a character with mental illness. Overall, 42 characters with mental illness were identified, 69% of them were classified as “homicidal maniac”, 4.8% as “zoo specimen” and 2.4% as “narcissistic parasite”. Twenty-three percent were classified as “other depiction” including the categories “dysfunctional invalid” (7.1%), “paranoid conspiracy theorist” (4.8%), “comic eccentric” (4.8%), “afflicted victim” (4.8%) and “illness in name” (3.4%).

They conclude that “video games contain frequent and varied portrayals of mental illness, with depictions most commonly linking mental illness to dangerous and violent behaviours.” (p.1592).

***Ferrari et al. (2019): Gaming With Stigma: Analysis of Messages About Mental Illnesses in Video Games***

Ferrari et al. (2019) searched games between January 2016 and June 2017. They reviewed 789 games of which 100 games had content related to mental illness. The game elements framework (Dickey, 2005) was used to analyse the content. Almost all mentally ill characters (97%) were portrayed in a negative and stigmatising way, being violent, lost, lonely or helpless. Mental illness was also portrayed in some games as manifestation or consequence of supernatural phenomena or paranormal experiences. Only a minority of the games’ descriptions included medical terms. About 75% to 80% of games had game settings and ambiances that pertained to themes of mental illness. Hospitals and asylums, often described as “abandoned, decrepit or dark” are common settings, the eery atmosphere underlined with music and paranormal activities like ghosts. In most games, mental illness and game goals were intertwined. Ferrari et al. (2019) conclude that the experience of mental illness, including its treatment and settings of care, are portrayed in a way that perpetuates well-known stereotypes and prejudices associated with mental illness. Persons with a mental illness (especially psychosis) are violent, scary, insane, abnormal, incapable, unlikely to get well, isolated and fearful.

***Fordham and Ball (2019): Framing Mental Health Within Digital Games: An Exploratory Case Study of Hellblade***

Fordham and Ball (2019) analysed the game *Hellblade: Senua’s Sacrifice* (PC) using frame analysis (Deterding, 2009). Commercial as well as serious game aspirations are served by *Hellblade’s* approach. The main character Senua is struggling with psychosis that is, within the historical setting, framed as a curse resulting in stigma and isolation. The story of *Hellblade* is largely informed by Senua’s psychosis, using auditory and visual hallucinations allowing players to experience symptoms of psychosis themselves; players hear an ongoing chorus of voices within Senua’s mind. *Hellblade* was co-developed with mental health professionals. According to Fordham and Ball (2019), the use of technology such as motion capture and binaural sound recordings is an effort to offer an empathetic experience that is comparable to the lived experience of people who are dealing with mental illness, which contributes to the de-stigmatisation of mental health.

***Anderson (2020): Portraying Mental Illness in Video Games: Exploratory Case Studies for Improving Interactive Depictions***



Anderson (2020) analysed three video games (*Hellblade: Senua's Sacrifice*, *What remains of Edith Finch*, *Doki Doki Literature Club*) as case studies. To find out how video games may more accountably portray mental illness, he used Malliet's Qualitative Video Game Content analysis (Malliet, 2007). This method, which focuses on design principles, grouped seven initial categories: audiovisual style, narration, complexity of controls, game goals, character and object structure, spatial properties of the game world, and balance between input and pre-programmed rules. *What remains of Edith Finch's* primary benefit stems from empathising with the experience of someone experiencing a mental illness — or at least the outward consequences of mental illness. Pathological gameplay as a method of coping with depression or substance abuse coincides with research. *Hellblade* is showcasing the complicated, often contradictory nature of mental illness symptoms, portraying a mental illness as both a gift and a struggle. *Doki Doki Literature Club* relies on old tropes of mental illness as a justification for the game's horror and portrays mental illness as a horror-filled experience that inevitably leads to suicide. Games' ability to invite players to empathise with characters, even to act in a virtual world as if they were these characters, opens avenues. Through these, perceptions of mental illness can shift for the better instead of being used as a trope to explain villains' behaviours and thus associate mental illness with violence and villains. Mental illness can be shown as a challenge that can be faced, treated, and, in some cases, improved.

***Scholte and Major (2021): Playing with Mental Issues – Entertaining Video Games as a Means for Mental Health Education?***

Scholte and Major (2021) analysed four games: *Debris* (2017, update 2018), *Hellblade: Senua's Sacrifice* (2017), *Please Knock On My Door* (2017) and *Sea Hero Quest* (2016), using document analysis (Bowen, 2009) and game analysis. Mental health issues were integrated at the level of the gameplay, with a strong emphasis on the main playable character's perspective with the mental health issue. The game designers relied on expertise from experts on the subject-matter. They employed a medical, individualised model of the mental illness, focusing on symptoms and experiences of persons concerned. The main player character is alone, shown struggling or fighting with his / her mental health issue and controlled by players in single-player gameplays with limited interactivity. Depictions of life with a mental health issue and the settings mirror typical depictions in video games: gloomy, dark game worlds set the stage for the main player characters' painful fight or ordeal. Theories of collaboration and interdependence are not successfully translated into the analysed video games.

***Buday, Neumann, Heidingerová, et al. (2022): Depiction of mental illness and psychiatry in popular video games over the last 20 years***

Buday, Neumann, Heidingerová, et al. (2022) analysed 546 items of the top selling games of the years 2002 to 2021. Mental illness was depicted in 54 (12%) of games through 57 characters. The majority of the representations (75%) was negative, in 13 instances the depiction was neutral and in one instance the emphasis was positive. The most represented mental illness was schizophrenia-like illness, depicted in 24 games and in 20 of these representations the depiction was negative: “violent, homicidal, suffering from either paranoid or megalomaniac delusions and audiovisual hallucinations”. In four of the games, the representation was more balanced. In 17 video games, hallucinosis was represented – they are represented mostly as audiovisual and horror-like or otherwise fear-inducing. In eight video games, personality disorder was recorded, with five of these instances portraying dissociative identity disorder. In all cases, the character was having a “violent, dangerous, unpredictable and homicidal alter ego”. One positive depiction of a character with a highly functional type of autism was represented. All reviewed video games portrayed psychiatric or psychological interventions in a negative way.

***Kasdorf (2023): Representation of mental illness in video games beyond stigmatization***

Kasdorf examined the most popular video games of 2018 and 2019; 16 of the 74 examined games included 24 characters affected by mental illness. She used the category system for representing mental illness in digital games by Dunlap and Kowert (2021). Representation of mental illness often lacks depth, since only two of the 24 affected game characters were represented beyond the surface and from multiple perspectives: *Celeste* (2018) and *Gris* (2018). In both games, the antagonist of the protagonist is their mental illness. This reproduces existing negative portrayals of mental illness and labels those affected as dangerous and evil. However, in both games, the antagonists end up supporting the main character to make progress in the game. Both games represent mental illness as part of the environment and atmosphere of the games, contrasting the abandoned psychological institutions as settings of horror games evoking negative attitudes toward professional medical treatment of mental illness. The dimensional representation of mental illness in both games is lacking any stigmatisation or stereotypisation. This might be due to included expertise, either through professional knowledge or first-hand experience.

**Synthesis**

***Prevalence of Portrayal of Mental Illness in Video Games***

Three studies systematically selected video games from a wider range of available games (in contrast to a subjective selection). Shapiro and Rotter (2016) looked at the fifty highest-selling games in each year from 2001 to 2013, Buday, Neumann, Heidingerová, et al. (2022) examined the 30 best-selling games for each year from 2002 to 2019, and Kasdorf (2023) looked at the most popular video games based on user ratings in 2018 and 2019. Those three articles found a prevalence of mental illness depiction in 24%, 12% and 22% of reviewed games respectively. Considering that Buday, Neumann, Heidingerová, et al. (2022) examined the highest sample size over the longest time, with 456 total games, it is likely that the actual prevalence is closest to their result (12%).

### ***Reviewed Games***

The video games investigated in the records came out between 2002 and 2021, and studies ranged between one and 100 reviewed games. Video games were primarily subjectively chosen, with some records scanning all top-selling / most popular games of a specific time frame. Importantly, the subjective inclusion of video games led to a majority of the records investigating the game *Hellblade*. Find a comprehensive list of all games analysed in the articles in the supplementary table (Supplement 1).

### ***Negative Portrayal of Mental Illness in Video Games***

Most of our included articles found a negative or stigmatising portrayal of mental illness in video games. This includes that often antagonists show signs of mental illness by exhibiting “insane”, violent or unpredictable behaviour, which leads to the main character / player needing to defeat or kill the enemy. Frequently, this can be found in the horror-genre, where also mental health institutions such as asylums are used to create a scary environment. In cases where the protagonist suffers from a mental illness, game-worlds are still often dark, scary or gloomy.

### ***Positive Portrayal of Mental Illness in Video Games***

Some of the included articles found or focused on good examples of portrayal of mental illness in video games. One particular advantage is the active nature of video games, where the player engages with controls. This can lead to a more empathetic experience. Furthermore, some games show mental illness as an antagonist, which the player needs to work with in later gameplay, perpetuating a less negative portrayal of mental illness. Though rarely, some games therefore show mental illness as something that can be faced, treated and improved.

## **Discussion**

This scoping review aimed to map the literature around portrayal of mental illness in video games. Only a limited number of studies have addressed this issue so far, yet the recent time range of the records we found indicates that interest has been rising in recent years.

Most video games show a rather negative depiction of mental health, and mental illness is often used as a way to show horror-hallucinations or give antagonists a dangerous and violent aura. In many video games, as well as in other media, mental illness and violence go hand in hand. The nexus between violence and mental illness is one of the major sources of prejudice and discrimination against people with mental illness (Corrigan & Watson, 2005). Yet, in reality, the link between mental illness and violence is considerably weaker than portrayal shows, as only a minority of people with psychiatric disorders engage in violent behaviour (Corrigan & Watson, 2005; Kemal et al., 2023; Schwartz et al., 2015).

While the depiction is generally negative, some included records examined examples of less stigmatising portrayal, showing that video games can also be a good medium to elicit empathy through the active gameplay. These games (e.g. *Celeste*, *Gris*) show mental illness as a part of oneself that is not necessarily evil and can be overcome. Some commercial games even manage to integrate educational content (e.g. breathing exercises in *Celeste*). Among others, co-development with mental health experts as well as experts by experience might be a key component for creating non-stigmatising game characters (e.g. Anderson, 2020) that can foster public understanding and might provide opportunities for those affected to identify with these game characters. *Hellblade*, which has gained a reputation both within the scientific community and the general population of portraying mental illness well due to the inclusion of experts in the development of the game, was one of the primary games of interest in our included studies. It should be noted that, despite the game's commercial success, a bias is evident as many included records focused on examining this particular game. Furthermore, certain records note that the portrayal of Senua, the main character in *Hellblade*, remains sombre, dark, and frightened, exhibiting a predominantly horror-like atmosphere (Scholte & Major, 2021), thereby challenging the often laudatory feedback the game has received. The representation offers limited "positive" depictions of the illness.

Another area that might help with better awareness is the engagement with and discussion about the topic of mental illness not only within the games, but also within the gaming community. This could lead to better awareness for example through discourses in games' news or through streamers / influencers in the gaming scene (Anderson & Orme, 2022). The same effect has also been found in other areas of mainstream media and mental illness. Influencers on social media have a positive influence on awareness and attitudes towards mental

illnesses (Cummings & Konkle, 2016; Orphanidou & Kadianaki, 2020; Ottewell, 2017). For example, the hashtag #YouGoodMan, which followed a public disclosure of depression by the Hip-Hop artist Kid Cudi, encouraged black men to engage in conversations about their mental health within a supportive environment (Francis, 2021).

Media representations of mental illness are increasingly subject of discussion and experts advocate for a positive and more realistic representation (Mittmann et al., 2023; Orm et al., 2023). While we too share this attitude, it should be kept in mind that videogames are first and foremost entertainment media and are as such often exaggerating reality. Fighting is an integral part of many video games and is often one of the main elements of interaction. Many games are also embedded in a storyline, which makes it necessary to create more in-depth opponents to fight against. Some psychiatric illnesses have an undeniably distressing aura, which can create an easy antagonist. Symptoms of psychosis such as auditorial or visual hallucinations can also serve as a dramaturgical narrative. Mental disorders or unspecific “crazy” people are often used in the horror genre, including gloomy versions of mental health services such as asylums. The question arises if players of these games, which are mostly set in a quite unrealistic world, even associate those characters or locations with real-world mental disorders or if they are a fantasy just like the rest of the game world. Importantly, other reasons that could serve as reasons for combat or fighting, such as religious or cultural disagreements, conflicts over the use of resources or ownership of territory are potentially as much or even more detrimental for public awareness and stigmatisation. In order to draw practical conclusions and adopt best practices, it might be necessary to investigate the topic more closely. For example, maybe it is less important to adopt a realistic portrayal in horror games or other fantasy settings (e.g. *Batman Arkham* series) than in more realistic setting, or maybe how the illness is addressed influences how it is perceived (e.g. a “crazy” character versus a “depressed” character). This also aligns with the research around violent video games, which has not been conclusive about the actual influence that video games have on real-life behaviour. Therefore, future studies should investigate the real-world influence that games have on mental illness and how much games – which are often set in a very unrealistic setting – actually influence awareness of consumers about mental illness in the real world.

### **Limitations**

This review provides a comprehensive overview of research investigating the portrayal of mental illness in video games. However, it is important to acknowledge certain limitations that may hinder drawing definitive conclusions. Firstly, we only included studies stating a clear and comprehensible method. This vouches for a

certain scientific standard, but therefore some potentially relevant articles had to be excluded. We also excluded non-commercial video games, such as serious games developed by psychologists. Even though many of them might include portrayals of mental illness, due to their significantly smaller audience, their influence on the public is significantly lower.

### **Conclusion**

In this review, we summarised the portrayal of mental illness in commercial video games. The majority of video games portray mental illness, particularly psychosis, in a stigmatising and negative way. Mental illness frequently serves as a reason for violent behaviour and was repeatedly portrayed as consequence or in line with paranormal experiences. Even though some games try to adopt a less negative and realistic approach to mental illness by including experts in the developmental process, the dark and sorrowful aura predominantly remains.

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