OCD AND EMPATHY GAMES
Using empathy games to inform the public about OCD

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Abstract

This research focuses on obsessive-compulsive disorder (OCD) and how games focused on making the player feel empathy (empathy games) can increase the public's general knowledge of the disorder. The disorder is currently commonly misunderstood and is not always taken seriously, something that potentially could hurt those with OCD. The stigma surrounding OCD sometimes makes people avoid getting the help they need, making them suffer in silence. The objective of the research was to define several game design principles that suggests what a developer should focus on when making an empathy game about OCD with the purpose to inform the general public. This was done by analyzing several scientific articles discussing either OCD or empathy games, and concluding the most important parts from them into game design principles. Four game design principles were found; target audience, reality, clarity, and inclusion. These have not been tested in a practical setting, but can possibly serve as guidelines when making an empathy game focusing on OCD.

Keywords: Game design patterns, empathy game, obsessive-compulsive disorder, OCD
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1 Introduction

The focus of this study is to find suggestions of what is needed when making an empathy game, which is a game which purpose is to make the player feel empathy. Games in the genre could possibly be a good tool to change the opinion of the general public about stigmatized groups. In this study the mental disorder obsessive-compulsive disorder was chosen as a case study, and the results could possibly be applied to similar stigmatized mental disorders with small changes.

As discussed later in the background chapter, obsessive-compulsive disorder is one of the most common mental disorders. Despite this, it is highly misunderstood and sometimes even used to describe a positive trait. Those who suffer from OCD are therefore often not taken seriously, and the stigma surrounding the disorder is a common reason why many chose to not get the help they need.

One suggested way to inform the general public of what OCD actually is was to use an empathy game: a game focused on making the player understand a problem by evoking empathy. Empathy games have been found to have a positive effect on how people perceive other people, and in addition, the players often feel motivated to research the problem themselves after playing. This means that in theory, an empathy game should be a viable tool to change how the general public thinks about OCD.

To further analyze the field of empathy games, such games with the focus of OCD were searched for. Two such games were found, and the results of the study was compared to how the found games were designed.

The purpose of the study was to find out which components would be critical in the making of such a game from a design standpoint. The research question the study was based upon reads as the following: “which game design principles are important when designing an empathy game with the goal to increase the understanding of OCD?”.

To answer the research question, literature was analyzed and summarized. The articles chosen were from both involved fields: how to design empathy games, and about OCD in relation to the public.

Four game design principles were found in the information gathered from the articles. These were target audience, reality, clarity, and inclusion. This means that the results showed that a developer creating an empathy game about OCD should have extra focus on the target audience as they need to be able to identify with the characters in the game to be able to empathize with them. Furthermore, the developer should make sure that the representation of the disorder is accurate and according to facts. Emotions portrayed should be clear for the player to interpret, as they must be able to do so to feel what the characters are feeling. The last game design principle is not aimed towards those who are making an empathy game about OCD, but towards those who are making any other kind of game. Having the disorder portrayed in other kinds of games with any other purpose gives the disorder exposure, and
could help people get familiar with it. This could reduce the stigma surrounding it, and to normalize it.

It was concluded that these game design principles could constitute as a base which further studies could build upon, with further research and practical application, either in this example case with OCD, or with another mental illness as an example case.
2 Background

The background chapter introduces several critical concepts and important information to the thesis. This includes OCD: what it is, common symptoms and issues, as well as how it’s commonly wrongly portrayed. Empathy is also introduced in the chapter, with focus on what it is and research on how it can be used with great benefit in storytelling as well as games. Lastly, game design principles are introduced, something that is important to know about to understand the purpose and research question of the thesis.

2.1 Obsessive compulsive disorder

OCD is one of the most common mental disorders, second only to depression (Cyr, 2007). Despite this it is often misunderstood and overlooked by the general public as well as media, and it is rarely properly, if at all. To be able to plan a strategy to inform the general public about the disorder it is important to understand what it is and what misconceptions there are.

2.1.1 Symptoms and issues

The symptoms caused by OCD can vary significantly between different individuals, and every patient has their own experience of the disorder (Williams et al., 2013). Despite this, Williams et al. have been able to categorise four subtypes of the disorder and those with the disorder can suffer from one or many of them: contamination and cleaning, doubt about harm and/or checking, symmetry and/or ordering, and unacceptable thoughts and/or mental rituals. Furthermore, these things are connected with anxiety, and those suffering from the disorder often feel the need to perform acts repeatedly to lessen the anxiety or the intrusive thoughts.

Many who suffer from OCD feel shame about their disorder and it is common to let the disorder go untreated for years (Cyr, 2007). This can cause great distress for those with OCD and many find it hard to lead a normal life.

2.1.2 Misunderstandings

Despite being one of the most common mental disorders, OCD is often misunderstood and falsely portrayed in media. A study conducted in 2000 (Wahl) showed that only 31 out of 107 articles in magazines were actually about the disorder, despite being mentioned in the headline. Furthermore, OCD is also often confused with perfectionism, and is even used as a positive and desirable trait in everyday language. It is also often reduced to the need of symmetry or order, despite the illness being much more complex than that.

All in all the disorder is rarely properly depicted and the false understanding the general public has of the disorder can make it hard to identify and talk about. This could be one of the reasons why those with OCD often feel shame, and why so many let it go untreated (Cyr,
2007). Better understanding of the illness is therefore of interest to increase the general mental health of the population.

2.2 Empathy games

A few games with the purpose to evoke empathy in the player has been released in the recent years. Examples of games that could be claimed to have this intention is *The Beginner’s Guide* (2015), *Coming Out Simulator 2014* (2014) and *That Dragon, Cancer* (2016). These three games have several things in common. For instance, they convey personal stories which are said to be based on the creator’s own experiences. The games are also seen as aware of the fact that they are games, and approach the player in a direct and personal manner.

Games such as the ones mentioned above have inspired the coining of *empathy games* (Bartelson, 2015). Games that are considered to be empathy games are not only designed to make the player feel, but to expose them to situations they may never have experienced themselves and make them understand what those situations feel like. Hence, these games often tend to be thought provoking as well as on a personal level when it comes to the story they tell.

2.2.1 Empathy

Empathy is when a person can feel the same as someone else, in comparison to sympathy which is when a person feel *for* someone (Giovanelli, 2009). A common example of the distinction of the two is how someone would feel regarding a child being scared of a dentist. If a person feels sorry or pity the child they feel sympathy, as they feel for the child and not the same emotion as them. If the person instead feels scared, just as the child, they feel empathy. Empathy and sympathy are not feelings though, which Giovanelli points out. They are phenomenons where people feel emotions, but are not emotions themselves.

Furthermore, Giovanelli claims that empathy or sympathy for the characters are important to make an impact on the player with a narrative. Without it, the story tends to become meaningless and not worthwhile. Empathy is also important when the story’s purpose is to change attitudes or inform (Oswald, 1996). The study by Oswald showed that people were more likely to change their opinions and attitudes towards different social groups if they felt empathy for them.

2.2.2 Empathy in games

Games are very much suitable as a medium to make the player feel empathy according to Belman and Flanagan (2010). A big part of this is due to the player’s ability to control and interact with the game to change the outcome. The players also have to make decisions in many games, which the game in return responds to. Additionally, the player has to actively interact with the game, compared to other media such as movies or literature, where the immersive setting continues without the onlooker doing anything. The study conducted by Belman and Flanagan also showed that games often do in fact make the player feel empathy, and that the positive response gained from empathizing with someone typically last for at least several months.
A study by Bachen et al (2016) also showed that the players were interested in finding out more, and also did so, when having played a game which made them empathize. This indicates that games which focus on empathy can also serve as a learning tool for the player to gain interest and do their own research beyond the game itself.

### 2.2.3 Empathy games and learning games

Unlike empathy games, there are types of games specifically made to teach or inform, where the main focus of empathy games is to make the player feel, and learning is not necessarily the main purpose. Games that focus on learning have been called many things, and sometimes have slight differences, for instance educational games, edugames, and digital game based learning (Alvarez & Damien, 2011). All of the mentioned examples are focused on learning and retaining information.

Both different kinds of learning games and empathy games are serious games by Chen & Michael’s (2005) definition: “Games that do not have entertainment, enjoyment or fun as their primary purpose”. As empathy games are used as a way to inform in this case, the line between learning games and empathy games may seem thin. There is typically a clear difference between the two, though: learning games often focus on facts and information, and the player is often told to repeat actions to ensure that they retain the knowledge. They are also often played in a learning setting, such as in a classroom (Alvarez & Damien, 2011). Empathy games do not necessarily do that. They focus on the emotion, and are often personal to the creators, as seen in for instance That Dragon, Cancer (2016), where the creators based the game on their own experiences with a cancer sick child.

The differences lead to different strengths of the genres. Different learning games are typically seen in classrooms and will teach facts and give knowledge. Empathy games on the other hand are good at changing opinions, as previously mentioned, which makes them suitable when informing the public about stigmatized groups.

### 2.3 Game design principles

It is common to use game design principles when designing games (Salen, 2007). Game design principles could be seen as guidelines, often based on previous work, and in addition seen as a standardized way of solving common problems within a genre or type of game. The principles are by no means strict, and other solutions could be equally sufficient. As Salen mentions, game design principles can be on a more general level, or specific to one type of game. For instance, iteration and testing the game frequently is one general principle that typically is useful for all kinds of games. In addition, some principles have been relevant for a long time, while others might change based on response from the players or new research. For instance, the previous example has been relevant for a long time as even older analogue games typically have been iterated.

In this case, the game design principles found are based on literature and have not been tested in a practical setting. This means that the result of the study can be iterated and improved upon, as game design principles often are.
3 Already existing games

When it comes to games explicitly about OCD, there are few available games on the market. For example, when searching for “OCD” or “obsessive compulsive disorder” on the gaming platform Steam, none of the found results are explicitly about the disorder, unless if used as a marketing technique for puzzle games. When using the same search word on the indie game site itch.io though, several games can be found. Five were found when searching for “obsessive compulsive disorder”, and twelve when searching for “OCD”. Not all games were relevant due to not being empathy games, and some games were not available to play. In the end, two of the games were identified as empathy games about OCD and were played to give a picture of the current status on the market.

3.1 Obsession (demo)

The first game was Obsession (demo) which is a text based game created by the user amg315 (year unknown). To play the game the player has to read the text and click to move forward to the next text. In certain places there are multiple options that lead to different results. Hence, the game is interactive and the player can choose their own path forward.

The game is about the main character, as well as Obion, which is a representation of OCD. Obion tells the main character what to do and how to act. Together they have to go through everyday tasks, such as getting ready for work. These regular tasks are constantly interrupted by Obion, who makes the main character do things such as repeatedly flicking the lights on and off, as well as hiding their feelings from their mother. The fear of being discovered and marked as weird or crazy is also brought up in the game. The game also tries to include the player by bringing up common things that many people do when they are sad to make the player apply the main character’s emotion to themselves. For instance, the game rhetorically asks “You know when you listen to a sad song when you’re sad just to feel some sort of relief?” as the main character does just that.

The game brings up many aspects of OCD. For instance contamination, fear of injuring others, and intrusive negative thoughts are a part of the game. The disorder is also portrayed as draining, as the main character rarely has the energy for normal activities anymore.

3.2 you have ocd

The second game was you have ocd by the user muinil (year unknown). This game was described as a semi-autobiographical text based game about the creator’s own experience with OCD.

The game is in second person, and addresses the player as “you”. Like in the previous game, the player sometimes have to make choices to move the story forward, which means they can choose their own path. A text is always written with one exception before making a choice: “you have ocd. what do you do?”, which makes the theme of the game extremely clear. Also similarly to the first game, the game focuses on everyday tasks, such as making the bed and
choosing clothes. The mental disorder is not portrayed as a person or character in you have ocd, but instead as something that the main character has to do, almost like an anonymous voice in the main character’s head.

you have ocd brings up similar themes as Obsession (demo). For instance, repeated tasks and contamination are two of the themes mentioned. Intrusive thoughts are also included, and to stop worrying the main character has to perform a mental ritual five times to stop the anxiety.

3.3 Summary

Based on the two found working empathy games, the games available games on the market are text based and personal. They portray the disorder similarly, and bring up common symptoms such as intrusive thoughts, repetitive tasks and contamination.

Game design principles can also be seen. For instance, both games focus on a personal story where the player has to control the story through a character in everyday situations. The settings are probably chosen deliberately to make the player recognize their own life in the story, and is hence a game design principle to ease the player into the game. In addition to the everyday setting, both games are constantly interrupted by the intrusive thoughts displayed. This does not only affect the narrative, but also how the games were designed and how the game flows. This was probably also done consciously, as it contrasts the everyday situations in the games and showcases how it is to live with such an intrusive mental disorder.

The lack of games is worrying, but not surprising. OCD is not a topic commonly brought up by mainstream games, and instead typically brought up by small indie game developers.
4 Problem

The problem revolves around the common misunderstanding of OCD and how to inform the general public of the issue. One way of solving the problem would be to inform the general public of the disorder by an empathy game, as empathy games have shown that they are good at making people change opinions as well as increase the will to learn about the chosen topic. The goal is however not to raise awareness, as it seems that most people are aware of the disorder, but to make the general public understand what it is really about and clear up common misunderstandings.

Because of this a research question has arised: “which game design principles are important when designing an empathy game with the goal to increase the understanding of OCD?”

As the research question implies, the goal was to find out how to make a suitable game to inform about OCD. This was done through academic research to create game design patterns that can be used in the future to make such a game.

OCD in particular was chosen as a case study. Other mental disorders could possibly yield a similar result, but it is likely that they wouldn’t be quite the same. Other mental disorders typically have different problems in how they are seen by the public and thus must focus on different things when informing the general public about the disorder. In the case of OCD, the disorder is often portrayed as something good or even desirable, something that few other mental disorders probably are. In addition to this, which symptoms the disorder have could also influence which game design patterns are relevant when designing a game about that particular disorder. It can therefore not be guaranteed that the game design patterns found in the study is applicable to any other mental disorders, even though it is likely that there are common game design principles for games about mental disorders overall.

4.1 Method

The method of the study was mainly academic research that was later compiled to game design principles, important things to think about or include when making an informative empathy game about OCD. There were two types of articles chosen: one about designing an empathy game; and one type of articles about misconceptions, awareness and the understanding of OCD. These articles were found by a systematic approach, and the goal was to make the method replicable. After being found and deemed suitable to the study, the articles were read and theories and concepts were marked. Commonly appearing theories or concepts throughout the articles were then shaped into a framework upon which future work can rest.

4.1.1 Limitations

Other than being peer-reviewed, written in English and accessible for free as a student at the University of Skövde, there were only a few fixed limitations when it came to sorting and excluding articles. This was because of the broad range of articles that could be used to
answer the research question, such as quantitative or qualitative articles, as well as theoretical or practical procedures. Instead, each found article were assessed individually.

First of all, all articles had to be relevant to the research, either in parts or in whole. This meant that articles focusing on for instance violence in games were excluded and deemed irrelevant for the research. The relevance of the articles were often assessed early, either by judging the title of the article or the abstract (Randolph, 2007). Then the articles had to be deemed valid and reasonable in their claims. As the articles chosen were peer-reviewed and published, this was typically not an issue. Still, articles that for instance included very few participants could be excluded if the results were of a more indicative nature or inconclusive due to errors in the methodology.

For the sake of replicability, articles that could be questioned when considering these guidelines were excluded. This meant that only articles that were undoubtedly relevant to the research question as well as valid in its methodology could be chosen.

### 4.1.2 Analyzing the literature

For analyzing the articles to later be able to compile their contents into game design principles, a coding procedure was chosen (Randolph, 2007). Relevant theories, concepts or claims were marked and these could then be compared across the different articles. This enabled a way to efficiently mark the relevant things from each article, and to then be able to see if any of them brought up similar themes. All of the common and important themes could then be turned into game design patterns, hence taking the most relevant and important things for the research question from each article and compiling them all.

This is also why the research question was worded the way it was, with particular focus on the word “important” found in the research question. This derives from the fact that only the relevant things from each article, which are then compared between the articles, were chosen as game design principles. Things that were only mentioned in one article, or were of little relevance, was hence not chosen. Because of this, only the principles deemed important by comparing the articles were chosen as principles, and are therefore more commonly seen as of value when making an empathy game about OCD.

### 4.1.3 Pilot study

Before the actual study was conducted, it was deemed necessary to conduct a pilot study. The purpose of the pilot study was to find out if the research method actually gave an answer to the research question, as well as to determine specific parts of the study design: which search engines to be used, keywords to search for, as well as the number of articles necessary. It was also found that it was necessary to limit the search of articles to peer-reviewed articles to ensure their scientific value, as well as only choose those who were easily accessible to ensure that the test could be replicated. Because of this, the articles had to be free to access to the general public, or to be accessible to those with an active student account at the University of Skövde at the time of the study. When searching for articles about OCD it was also found that several articles had no relevance to the subject and was focusing on other disorders, while only mentioning OCD. In a similar fashion, when searching for articles related to game design of empathy games, a number of irrelevant articles discussing the connection between videogames and violence was found. These were excluded from the search as they were of no
interest to this thesis. Articles which were already included in the background chapter were also excluded.

When searching for articles about OCD, it was found that articles with the most relevance to the chosen topic was found when searching for the keywords “OCD public”. These yielded two relevant results each from the top ten articles found on both Google Scholar as well as WorldCat Discovery when logged in with an account tied to the University of Skövde. These four were deemed to be relevant to the study and could hence be used in the proper study to be analysed.

When searching for articles about game design frameworks for empathy games, a similar approach was chosen. Different keywords and engines were used to find which ones yielded the best and most relevant results with the given limitations. WorldCat Discovery turned out to be less effective when searching for game design frameworks, as most articles were irrelevant and typically focusing on the connection between videogames and violence. On the other hand, when searching Google Scholar with the key words “empathy game design”, a number of suitable articles were found amongst the top results.

It was deemed that the pilot study was successful as it showed that a number of relevant articles could be found, so that the main study could proceed.
5 Literature study

The source of information to compile the game design principles came from a number of articles, that were analyzed and compared. Trends amongst them were noted and the process of turning the information into concrete game design principles began shortly afterwards.

5.1 Chosen articles

Twelve articles were chosen by following the selection process described in the method section. The following articles were chosen in regards to their topic about OCD:

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<th>Article name</th>
<th>Author(s) and year</th>
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<td>Patient Preferences for OCD treatment</td>
<td>Patel &amp; Simpson, 2010</td>
</tr>
<tr>
<td>Public attitudes towards the mentally ill: A cross-cultural study between Bali and Tokyo</td>
<td>Kurihara et al., 2000</td>
</tr>
<tr>
<td>Public Recognition and Perceptions of Obsessive Compulsive Disorder</td>
<td>Stewart et al., 2019</td>
</tr>
<tr>
<td>Psychiatry on the Internet: Survey of an OCD mailing list</td>
<td>Stein, 1997</td>
</tr>
<tr>
<td>Public conceptions of mental illness: labels, causes, dangerousness, and social distance</td>
<td>Link et al., 1999</td>
</tr>
<tr>
<td>From primetime to paradise: the lived experience of OCD in Hawaii</td>
<td>Olson et al., 2007</td>
</tr>
</tbody>
</table>

Table 1

Articles about game design were also chosen according to the previously mentioned criteria, see the following:

<table>
<thead>
<tr>
<th>Empathy with Computer Game Characters: A Cognitive Neuroscience Perspective</th>
<th>Morrison &amp; Ziemke, 2005</th>
</tr>
</thead>
</table>
EMOTE: Embodied-perceptive tutors for empathy-based learning in a game environment  Serholt et al., 2013

Learning by Feeling: Evoking Empathy with Synthetic Characters  Paiva et al., 2005

Measuring Player Immersion in the Computer Game Narrative  Qin et al., 2009

Social Cognition, Empathy and Agent-Specificities in Cooperation  Fiebich, 2019


Table 2

The articles were read and relevant information from each article was summarized into short bullet points (see Appendix A). As mentioned earlier, the way that the relevant information from each article was gathered and compared to the relevant information in other articles was based on a coding procedure described by Randolph (2007). Theories, concepts and claims were highlighted and the relevant ones were picked out and summarized as seen in the appendix (see Appendix A). These relevant theories, concepts and claims were then compared between the articles and only the reoccurring ones were compiled into the results of the study.

5.2 Theories, concepts, and claims

The articles were of varying use, and not all information found in them were relevant. Furthermore, even more information had to be dismissed to form precise and understandable game design principles that would be of actual use in a practical setting.

In general, the summarized relevant points of the articles (see Appendix A) had a few common themes. The article by Kurihara et al. (2000) showed that cultural aspects played a big role in how those with OCD were viewed by the public. Stewart et al. (2019) were of similar opinion, and their study showed that in addition, ethnic minorities were less likely to seek treatment. One reason why those with OCD avoided getting help was according to Olson et al. (2007) the fear of stigmatization. It was hence clear that a cultural aspect played a big role on how society looks upon those with mental illness, and how those with mental illness behaves in reaction to that.

From a game design perspective, culture also played a big role. According to Paiva et al. (2005), many found it hard to relate to the characters and thus empathize with them if there were too big of cultural differences. In addition, they also claimed that the target audience
should be a big influence of how the characters are portrayed, as for instance some age groups prefer one style of graphics, compared to another age group. Morrison and Ziemke (2005) also claimed that the movements of the character could be one way to make the player relate to them. If they appear to alien, the player may have a harder time translating the movement and hence have a harder time reading them. Fiebich (2019) also agreed that body movement was important, and that emotions are often shared collectively through body language. Being able to read someone else’s body language clearly could hence affect the person’s own feelings.
6 Game design principles

Four game design principles were extracted from the information gained by the chosen articles. These were based on the common themes brought up in the articles as well as less common but important concepts, as seen in Appendix A. These are based on theory, and has yet to be tested in a practical setting.

6.1 Target audience

The first game design principle is the importance of the target audience. To make the player feel immersed, and to let them relate to the characters, the game should be designed with this specifically in mind to assure that the purpose of informing of OCD is fulfilled.

The target audience can be prominent in the design process in several ways. This includes graphics, sound, music and the character designs and personalities, as well as the difficulty of the game. This is due to different preferences of different age groups, cultures, socio-economic groups, and so on.

6.2 Reality

The characters and experiences should be based on science or real experiences instead of assumptions to accurately represent OCD. This is important as OCD often is misrepresented and misunderstood already, and doing that further would go against the cause. It is also important to keep in mind that OCD is a broad disorder that can be displayed in several ways.

6.3 Clarity

To make sure that the player understands the characters and the message, they should be easy to read and understand. This is particularly important when it comes to animations and graphics. The player needs to be able to identify the emotion of the character to feel it themselves.

6.4 Inclusion

One of the most important thing to make OCD more recognized and understood is to include characters with OCD and OCD themes more commonly. That doesn't only have to happen in a game specifically made for this purpose. Instead, it could be of great benefit to accurately display the disorder in all kinds of media, regardless of the purpose.
7 Analysis

The found game design principles should be of use when making an empathy game about OCD, as these principles are important based on the research. Some of them are of use when making a game in general, though. Most importantly, having a clear target audience is important to assure that the game is tailored to the audience’s needs and preferences. When making an empathy game about OCD, this is particularly important though. Based on the study, it is important for the player to be able to identify with the characters, something that a clear target audience is needed for.

The second principle, reality, is not necessarily important in other types of games, especially not if they don’t claim to be based on reality. It is of greatest importance when making games about OCD and other stigmatized mental disorders though, where actual facts play a big part to make people understand the disorder correctly. This means that the principle of reality most likely could be useful to have in mind when making other kinds of games, such as games about schizophrenia or multiple personality disorder.

The second principle was also present in the currently existing empathy games about OCD. Both Obsession (Demo) (amg315, unknown year) and you have ocd (muinil, unknown year) were both personal and accurate in how they portrayed OCD, even though they did it in different ways. It is worth pointing out that many of the games found claiming to be about OCD weren’t about OCD at all, and only using the disorder as a gimmick or marketing tool. So even if it is important to display the disorder correctly to reduce the stigmatization, only a few games actually did that.

The third principle, clarity, was also present in the two mentioned empathy games about OCD (amg315, unknown year)(muinil, unknown year). Even though they were text based, and hence without graphics or sound, the emotions felt by the main characters were made clear by their actions and words, and even through the gameplay. For instance, Obsession (Demo) wouldn’t let the main character tell their parents they were fine, as they clearly weren’t. This also shows that emotion can be portrayed without typical means, such as facial expression. Hence the lack of graphics is no excuse to not portray emotions in a game.

The fourth principle, inclusion, is not really something a developer has to think about when making an empathy game about OCD, but as the research found stressed this a lot it would be strange not to include it. When making a game about OCD, the topic of OCD should automatically be included. Instead, this principle is useful when making other kinds of games. Including people with OCD in other types of games, as well as other stigmatized mental disorders, makes the players used to their existence and how they might act. This could lead to reduced stigmatization, and possibly make more people with OCD get treatment sooner.

All of the found principles could most likely be adapted to other disorders or types of games with some slight modification. This was largely due to the fact that OCD was used as a case example, and other mental disorders are in a similar misunderstood state.
8 Conclusions

8.1 Summary
Despite being one of the most common mental disorders, OCD is often misunderstood by the public, the ones with OCD themselves, and even health care professionals. This issue often leads to stigmatization and many people with OCD avoid getting help because of this. Informing the general public about what OCD actually is could hence be of great benefit.

One way of informing the general public is through empathy games. Those games are focused on making the player feel with the characters of the game, something that often changes opinions and makes the player more interested in learning more about the issue themselves.

To explore the current situation on the game’s market regarding OCD, games having the disorder as a topic were searched for. Steam, a platform for games, had no games explicitly about the disorder. The site itch.io, however, had two playable empathy games about the disorder.

The research question was because of this the following: “which game design principles are important when designing an empathy game with the goal to increase the understanding of OCD?”.

To answer the research question twelve articles were found, and all of them were either about OCD and mental illnesses, or about designing empathy games. These articles were analyzed and common themes were summarized as game design principles.

The first principle was increased focus on the target audience, as different audiences have different preferences that are necessary to make the player relate to the characters.

The second principle was to stick to reality, with science or real-life experiences as an influence instead of assumptions of the disorder. Assumptions is a big problem already, and one reason why OCD is so misunderstood.

The third principle was clarity, and to make sure that the player can understand how certain characters feel and why they act as they do. It is unreasonable to ask someone to feel empathy with someone they don’t understand, and so without clarity the aspect of empathy is lost.

The last principle was to include characters with OCD in many settings and not only in games specifically about the disorder. More exposure is good as it makes people realize that those with OCD are normal people, and that the disorder is actually quite common.

All of the principles were compared to the previously found empathy games about OCD. It was unclear whether or not the developers had the target audience in mind when creating the games, but the two following principles were detected in their games. Both games stuck to an accurate representation of the disorder, and the emotions of the main characters were clear,
even though both games were text based. The fourth game design principle, inculcation, was not applicable as the games were indeed about OCD.

8.2 Discussion

The result of the study, the design principles, was clear based on the found articles. There was a noted absence of suitable articles though, given the criteria of the search. Many articles that seemed to have been of great relevance to the study were hidden behind paywalls, and hence excluded from the search. More suitable articles could possibly have given a larger amount or more accurate game design principles, and it would be interesting to do the same research again in the future to see if there is more information about designing empathy games or OCD then.

It is important to notice that the result of the study is purely hypothetical, and not confirmed nor tested in a practical manner. While the game design principles found could work as a great guide of what to focus on when making an empathy game about OCD, it has not been confirmed that they actually work, or make such a game better suited for its purpose. Making such a game based on the game design principles found would be of great interest though, as no similar research such as this has been found. However, two games have been found and two of the game design principles could be seen in the games by playing them (amg315, unknown year)(munil, unknown year). These are the reality and clarity principles. The inculcation game design principle is not applicable as the games were about OCD, and it is unknown whether or not the creators of the games had a specific target audience in mind when designing them.

When it comes to ethics, there should be little of concern. It is however important to keep the representation of disorders accurate and avoid being unnecessarily offensive. It is easy to misportray a disorder or illness, which can hurt those who suffer from it.

8.3 Future Work

The found principles would profit from being tested in a real environment, to later be evaluated and assessed. The principles should then be iterated further. It would also be of benefit to let health care professionals specialized in OCD give their opinion on the found game design principles, and share their experience in the matter. Game developers that are experienced in making empathy games could also be asked to give pointers on the game design principles. It would also be a good idea to ask those who suffer from the disorder of their opinions, to make sure that any potential games represent the disorder accurately and do more good than harm.

It would also be of interest to continue the research of OCD and empathy games separately. OCD has been researched in the field of psychology before, but it was found during the search of articles that there was a lack of research done on how to make the general public recognize and understand the disorder properly. More research of empathy games would also be of interest, to further evaluate their efficiency and benefits. This does not necessarily be done with the topic of OCD. Other social issues could also be a perfect fit to evaluate the
efficiency of empathy games, such as the issues of gender, sexuality, ethnicity, minorities, and so on.

The found principles could possibly also be used with other stigmatized mental disorders, or a similar case study with another mental disorder could be conducted and the results compared to those of this one. By repeating this study several times with other mental disorders as a case, these could be compared and if possibly compiled into one single list of principles that could be of use when making empathy games about mental disorders.
References


muinil. (Unknown). [Video game]. you have ocd. muinil.


Appendix A -

Study one


Most of the participants in the study prefer to be treated with a combination of medication and psychotherapy. Only 16% wanted only medication.

Study two


Attitudes towards those with mental illness can be influenced by culture, religion etc.

Tokyo, which is industrialized, has more mental health spots than Bali. This suggests an acceptance of the mentally ill by the community in Bali.

Negative response to the mentally ill may be due to lack of exposure to them.

Study three


Ethnic minorities as well as those with little education or low income are less likely to know about OCD.

People are usually good at pointing out mental disorders, but are bad at pointing out exactly which one. OCD can be confused with depression and schizophrenia.

Ethnic minorities are less likely to get treatment.

OCD can be confused with OCPD, a personality disorder similar to OCD. OCPD is
associated with perfectionism and orderliness to a varying degree, but is not a mental disorder like OCD. OCD can hence be confused with a personality trait.

**Study four**


Mail lists helped people with OCD, family members and health professionals with recognizing the symptoms of OCD, as well as treatment, tips and general help.

**Study five**


People think people with mental illness can be more violent.

People with mental illness sometimes avoids getting help because of the fear of stigmatization.

**Study six**


People with OCD often have problems recognizing the disorder themselves.

OCD treatment is often not based in science.

The biggest issue revealed by the study is lack of information by the patients, health professionals, and the public.

OCD should be easy to diagnose, but is often misdiagnosed due to lack of basic education. It is also often mistreated due to this. Needs to be taken seriously.

**Study seven**

From a first person view, the player doesn’t have to “translate” their movement as they have to do in a third person game.

Third person is typically still effective. People can experience the psychological side of pain even though they are not experiencing pain themselves, but only watching someone.

In uncontrolled third person, the player can typically relate to the other person if the person is relatable enough. This includes other humans, but rarely animals with another movement set.

Study eight


“Animated pedagogical agents” can increase learning, social interactivity and fun, provided they use social cues

Study nine


Expressions can be hard, and it is very important to make sure that the player knows what a character in third person is feeling

To be believable, the character should have a strong personality. The character should be consistent

The age of the target group is important for the graphical content. Some age groups tend to prefer a cartoon-look, while other may prefer realism etc.

Cultural aspects can influence how the player relates to a character. For instance, if all the characters wear school uniforms this may make players from countries without school uniforms feel less relation to the characters
Study ten


Players must be immersed to feel engaged and experience empathy

It is also important to make the players identify with the characters and make them feel like a part of the story

Study eleven


Emotions can be shared and felt collectively by spreading though for instance body language

Empathy increases the odds of sharing information, as well as the willingness to do so

When someone feels empathy, they are more likely to help the person they empathize with if they are in the same cultural group. Regarding someone as a friend also increases the willingness to help

Study twelve


The right amount of challenge is needed to keep the player interested

Aesthetic is important to stimulate the part of the brain that handles rewards and emotions. This includes graphics, but also sound and music

It is important for the players to think they are in control and can play the game their way. They may become bored or unmotivated otherwise