



An Exploratory Study on Gender Dysphoria & Character Customisation

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ABSTRACT

In the present paper, we set out to understand in what manner character customisation of a video game could have an influence on the mental state of transgender players. Current literature shows that a player's character can indeed be used to experiment with gender-related struggles in a safe environment. To this end, studies suggest that the character choice of transgender players is based on an alignment with their actual, self-identified gender identity; as a means of both experimentation and wishful identification. However, only limited research has been conducted to find how the portrayal of a video game character's gender specifically influences the player's gender dysphoria (i.e., the distress a person feels due to a mismatch between their gender identity and their sex assigned at birth). As such, the present paper contributes (1) an overview of selected background works on the interplay of gender and character customisation, and (2) a qualitative study that includes 37 transgender adolescents between the ages of 16 and 23. Findings of the study extensively discuss to what extent – and to what effect – transgender adolescents use the possibility to customise their character as a means to experiment and/or come to terms with their gender identity.

CCS CONCEPTS

- **Social and professional topics** → Gender; Sexual orientation;
- **Applied computing** → Psychology.

KEYWORDS

Gender dysphoria, video games, character customisation

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1 INTRODUCTION

In recent years, violence and discrimination against transgender individuals, or specifically people that experience so-called *gender*

dysphoria – i.e., the distress that a person feels due to a mismatch between their gender identity and their sex assigned at birth^{1 2} – has become progressively more prevalent [7]. While representation of the transgender experience in the media has improved and the awareness of gender identities outside the male and female binary has increased [13, 15, 47, 69], it has been met by a surge in anti-trans rhetoric and legislation [7]. For a growing group of people wishing to experiment with their gender expression [2, 46, 63], this makes for an unsafe environment to do so.

While transgender individuals typically display particular strength and resilience into fighting gender stereotypes and societal norms, a lack of important social support contributes to vulnerability from a psychological standpoint [37]. The rampant presence of gender-based violence, further increases this vulnerability [67].

Additionally, a lot of individuals may – for a variety of reasons – not yet have sought professional help. Thus, data on transgender individuals that are reported in official studies – which are dependent on data of healthcare providers – can differ substantially from data that is aggregated by anonymously querying individuals for feelings of gender dysphoria [38]. This implies that healthcare professionals will generally not be able to come into contact with a large number of individuals that are in need of (social) support. Consequently, alternative forms of social support will greatly contribute to the general health of individuals experiencing gender dysphoria.

Experimentation with gender expression, on the other hand, is not something that has emerged in the last few years. Video games is one such area where *gender swapping* – as it is usually referred to when a player's virtual counterpart differs in gender identity – is commonly observed in video games that provide players with the opportunity to extensively customise their player character.³

Cavalcante [9] proposed that for transgender individuals, who live in a world created without them in mind, the affordances of online counterpublics and care structures may help them manage the trials and complexities of everyday life. Analogously, based on a review of selected background works and interviews with transgender individuals, we will show in the upcoming sections that character customisation – as offered in numerous video games – provides such positive affordances for transgender individuals.

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¹We acknowledge that one can identify as transgender without experiencing gender dysphoria. In the present paper, however, the focus lies on individuals that experience gender dysphoria.

²Occasionally cis-normative examples are built upon, which may not necessarily correspond to the author's own experience or views.

³For instance in MMORPGs (massive multiplayer online role-playing games), (cisgender) male players often choose a female character as their representation in the virtual world [18, 44, 56]. Interestingly, gender swapping by (cisgender) female players occurs comparatively less often [24, 28, 78].

2 GENDER DYSPHORIA & VIDEO GAMES

It is safe to say that engaging with video games has become an important part of normal adolescence [55]. The positive (and negative) impact of the use of games on adolescents' psychological, social, and school functioning is understood reasonably well [57, 74]. Important for the context of gender dysphoria and video games, is that studies consider games to have legitimate application in understanding and influencing cognitive skills like emotion regulation [76]. In addition, studies indicate a positive correlation between gaming hours and perceived social competence; suggesting that normative to passionate engagement in gaming can be helpful in developing and maintaining social relations and friendships [74].

Character customisation, specifically, is known to be of substantial influence on how a person feels [5, 22, 33, 58, 72, 75]. Offering players the ability to change certain features of their character, like abilities or visual appearance, can (1) create a sense of control and autonomy [33, 58, 72], (2) change behaviour [49, 79], (3) increase recall performance in complex tasks [5, 22], and, particularly relevant to our context, can (4) help a player feel more personally related to their avatar [32, 72, 75]. Character customisation, as such, not only implies the possibility for players to (re)create their own persona, it also gives players the *opportunity to experiment with their identity and explore self-aspects in a typically safe environment* (e.g., see [39, 53, 73]). Critically, however, one may note that in most games these options for experimentation and reflection are severely limited, not just regarding gender (predominantly conceptualised as an essentialised binary), but for instance also regarding skin colour or disability.

2.1 Gender representation in video games

At present, the distribution of gender portrayal in (narrative) video games is skewed heavily towards male or masculine characters. A study from 2001 found that, from a list of 70 games, 12% of the player-controlled characters or protagonists, was female. This was close to the 15% non-human characters but considerably less than the remaining 73% male characters. Additionally, both male and female characters possessed stereotypical characteristics [25]. A muscular build was a common theme among male characters, but the appearance of women was sometimes even based on an unrealistic and unhealthy thin image [20, 25, 35]. A more recent analysis by Friedberg shows that, besides the uneven distribution of gender portrayal, a female protagonist often becomes masculinised as the story progresses. Even though the player experiences the game through the eyes of a female protagonist, this character usually ends up using violence to reach her goal and fulfilling the same "power fantasy" that is usually attributed to male characters [21].⁴

Note that identity representations such as transgender, non-binary, genderqueer or intersex characters are highly uncommon in video games and occur most often in games that were developed in recent years. For instance, despite being released in 2004, the online video game World of Warcraft (WoW) introduced its first

transgender character only in 2020; with community reactions to this inclusion being examined by Heritage [27].

Shaw et al. provides an excellent overview of trends in LGBTQ digital game representation [60–62]. Transgender characters such as a trans man or trans woman are the most common among these gender identities in video games. They are followed by those that express nonbinary or genderqueer identities, while examples of explicitly intersex characters are even more rare. Furthermore, only few of these characters are actually protagonists [61, 62]. Writing a video game script that revolves around LGBTQ characters as protagonists, often requires more explaining than would be necessary with a normative sexuality and/or identity. Because of the extra attention, LGBTQ usually ends up becoming a central theme to the game in the mind of the consumer, which is not deemed preferable to most [60].⁵

2.2 Customisation and gender-swapping in-game characters

The possibility to customise your own character, including its gender, is thought to help players identify with their character and consequently increase the immersion of the game [31, 45, 65]. Surprisingly enough, narrative video games rarely offer this possibility of creating a custom character [21]. MMORPGs (Massive Multi-player Online Role-playing Games) on the other hand, where social interaction with other players is very important, often do offer a customisable character [56]. Similar to the gender portrayal in narrative video games, the option of customising one's character causes a skewed distribution as well. The customisation preference of players who play such video games seems to point to a dominant digital identity that mirrors Western ideals. The appearance of these characters is often of a more slender build, younger and more fashionable than the players themselves [18, 20]. This incongruity extends to the gender portrayal of characters, as male players of MMORPGs often choose to create a female character to play the game. Female players sometimes swap their gender in video games as well, but not enough to retain a balance [18, 44, 56].

2.2.1 Social benefit of gender swapping. It is thought that the trend of gender swapping occurs because it presents the players with a social benefit over others that do not gender swap. Playing a female character in a currently male-dominated domain such as video games causes male players, regardless of their own character's gender, to act more positively towards these female characters [28, 77, 78]. But while these gender swapping men generally do not actively hide their actual gender, both male and female players often lean towards idealised notions of either feminine or masculine appearance and communication of their gender swapped character.⁶

2.2.2 Role-playing & gender swapping. As another reason to swap a character's gender, players could be willing to create such character

⁴Naturally, much more can be said on gender representation in video games than reflected in these high-level statistics. To this end, we wish to refer the reader to some excellent articles by Consalvo and Harper [12], Mendelman et al. [48], Miller and Summers [51] and Dill and Thill [16].

⁵Including the option of LGBTQ characters as protagonists through video games that give players the opportunity to choose their own path, is, however, seen as a positive or neutral addition. Thus, optional LGBTQ in games centred on choices and inter-character relationships may be considered as the path of least resistance [60].

⁶This is similar to the aforementioned customisation preference that tends to Western ideals [18, 24, 42, 44, 64]. This increase in positive behaviour can, however, sometimes cause female players to gender swap as well. When positive behaviour towards female characters turns into harassment, female players are able to create a male character in order to avoid this undesired behaviour [24, 28, 78].

in order to aid the role-playing aspect of the game or to challenge their own acting skills [29, 59, 78]. Players can use the ability to swap gender to conform to a certain idea or stereotype set by either the player themselves or the community of a video game [29, 59, 78]. For example, in some video games, a character devoted to healing is generally not thought of as masculine. A big and strong fighter would, in that case, be a better fit for a male character [29, 78]. But in addition to stereotypes as a reason, playing as another gender than your own also allows players to practice acting in a way that they are not used to and might not even be able to, if not for the possibility offered by video games [14, 59]; it indeed provides the potential for learning [54], for reflecting on behaviour [17], etc.

2.2.3 Understanding gender identity through avatars. Lastly, and more relevant to the present research, players that gender swap can do so in order to safely experiment with their gender and understand it better in relation to their identity. People who do the same in real life, are exposed to risks such as being misidentified or even (physically) mistreated. But these real-world risks are typically non-existent when the swapping is performed in a video game [14, 29]. Jenson found that the general assumption of players was that a female avatar might be played by a male player. Because of this, when male players are discovered to be different from their portrayed gender, gender swapping is not met with any kind of surprise [29]. When female players, on the other hand, turn out to be female rather than their gender swapped male character, fellow players can often react with harassment [29]. In both cases, male and female, it is often reported that the line between the gender of the player and that of their avatar, blurs in the perception of fellow players. Even players that know the actual gender of the player behind an avatar, will naturally adapt to using personal pronouns corresponding to that avatar's gender [14, 19, 43].

2.3 Impact of Character Customisation on a Player's Mental Attitude and Behaviour

The way a person feels can heavily influence the avatars they create. While character customisation gives players the ability to create their whole ideal self, studies show that specifically players that are not satisfied with their lives – among whom are players that are more depressed or have lower self-esteem – often create dissimilar avatars that portray the way the player wishes to look like [6, 50, 70]. This effect through character customisation, however, is not a one-way process, as character customisation itself can impact the player's mental state as well. Here, we concisely highlight some important effects.

2.3.1 Control and autonomy. Autonomy, next to competence and relatedness, is, according to Self Determination Theory, a necessity for people to satisfy their basic psychological needs. In the context of video games, autonomy crucially contributes to the self-motivation that players experience when interacting with a game [58, 72]. By customising your own character, this sense of autonomy, as well as a sense of control, can be further enhanced for players. When differentiating between functional and aesthetic customisation possibilities, research suggests that even the most superficial customisation option could increase this sense of control and autonomy [33, 72]. Furthermore, while a player's sense of

control increases their sense of autonomy even more, both senses can consequently increase a player's enjoyment of the video game [33, 71, 75]. Even games that only let a player choose from multiple pre-made characters, instead of offering a wide range of customisation options, still show an increase in arousal from their players while playing as that character [40].

2.3.2 Identification. Besides a sense of control and autonomy, character customisation can also help a player to feel more personally related to their avatar. Through changing a character's name, abilities or visual appearance, players will be able to identify with the character they play more easily [32, 72, 75]. Not only does this offer players the possibility to recreate their own persona, but as previously noted, it also gives them the opportunity to experiment with their identity and explore self-aspects in a much safer way [39, 73]. Typically, most player characters in video games (i.e., avatars) can be customised in such a way that they no longer mirror the persona of the actual player, but can be better described as an ideal (or fantasy) version of the player. Similarly to the effect of television series on their viewers, identification with a player character can be differentiated as either similarity identification, where a player may identify with their character because of the similarities between them, or as wishful identification, where the player may wish (or fantasise) to act and look like the character [32, 36, 39]. In this respect, the creation of an idealised self via a game's customisation options, can be considered analogous to wishful identification.

2.3.3 Behaviour. Aside from positive effects on player enjoyment [3, 26, 39], a player's level of identification can actually influence their behaviour as well. For instance, and perhaps unsurprisingly, Yee found the attractiveness of an avatar to correlate with the resulting intimacy of the players. Furthermore, they also observed that players with a taller avatar, behaved more confidently when negotiating than players with a shorter avatar [79]. As another example, Merola and Peña reported that the appearance of avatars can indeed increase intimacy and confidence, as well as negativity or aggression in players [49]. These behavioural patterns are not surprising; in accordance with Bandura's social learning theory [4], observing a character perform a task or looking a certain way, significantly changes the behaviour of the player or observer. In addition, studies show that when a player identifies with the character, the effects of this so-called social learning process are greatly enhanced [1, 4].

2.3.4 Recall. Finally, Bandura's social learning theory is not limited to solely the learning of (social) behaviour. The influence of identifiable avatars on human behaviour has already been used to train employees for real-world business environments [5]. By recalling leadership situations encountered in a video game, players could use that knowledge to make the right decisions in real life. In general, studies reveal improved recall when knowledge was linked to gameplay experiences with one's video game avatar [22].

2.4 Relevant customisation options

Game-engine technology has advanced substantially over the past years, and players' demand for rich expressions of (character) appearance has consequently increased too [56]. In practice, however,

players often tend to refrain from taking full advantage of the freedom in customisation that is often provided. Instead, players are likely to change the less exotic avatar features only.

Indeed, literature shows that the ability to customise a character's hair or hairstyle is often deemed the most valuable or important to players [18, 30, 72]. One reason for this could be because these parts are clearly visible and are easily recognised by others. Besides that, the tendency to changing these common features could also be explained by how easy and often they are changed in real life [18]. In the same manner, Turkay and Adinolf [71] found that players favoured most changes if these would be noticeable from a distance. Other customisable features preferred by players include eye colour, body type and build, and voluntary skin markings (such as tattoos) [11, 71, 72]. These features, too, are common, as long as they can be changed to realistic properties, and often visible from a distance. A study by Cole et al. [11], in addition, noted the reported importance of some features that are less commonly changed in real life. Specifically the ability to customise involuntary skin markings, race and ethnicity, and gender appeared to be important to players.

In summary, the demand for freedom in character customisation might have increased, and the presence of such freedom has been observed to bring positive affect to the player [11]. In accordance with the conclusion of Ducheneaut et al. [18], it appears that players generally wish to have a lot of freedom in customising their characters, but only in selective areas that are commonly changed in real life and are immediately visible to others.

3 METHOD

Our research method consists of a survey that includes 37 transgender adolescents between the ages of 16 and 23, and follow-up interviews with respondents that offered to be available for such an interview. Findings of the study discuss to what extent – and to what effect – transgender adolescents use the possibility to customise their character as a means to experiment and/or come to terms with their gender identity.

3.1 General design considerations

Being conscious of the possibly sensitive development of young transgender individuals, potential respondents were approached under the auspices of the Dutch professional healthcare institute *Transvisie Zorg*, via an institute mailing list. All potential respondents were informed of the scope of the research, i.e., to study the effect of video-game character customisation on gender dysphoria. Particular attention was given to informing potential respondents of the research's ethical practises with regard to ensuring anonymity and privacy protection. No data was recorded or processed without a respondent's prior and explicit consent. Distributing the survey through a professional healthcare institute, ensured that all respondents were indeed part of the intended target group (i.e., transgender adolescents between the ages of 16 to 23 years).

To enhance validity of the study, questions in both the survey and interview were derived from insights or standard methods founds in academic literature, where applicable. This is discussed in detail in the following subsections. To minimise respondents possibly reporting socially-desirable outcomes, specific questions were counterbalanced with extra (semi-relevant) questions.

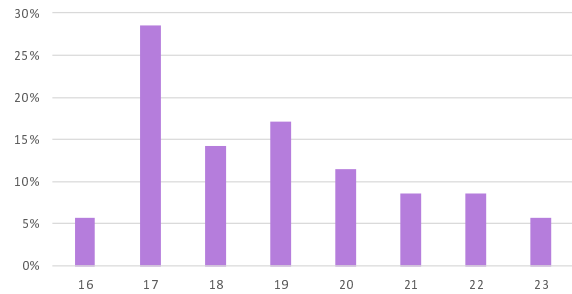


Figure 1: Survey: Age of the respondents.

3.2 Design of the Survey

3.2.1 Survey Participants. In order to reach the target audience for this study, a link to the survey was sent through a mailing list managed by professional healthcare institute *Transvisie Zorg*. This mailing list consisted exclusively of transgender adolescents between the ages of 16 and 23. 152 adolescents in total received the survey invitation, from which 37 responded by filling in the survey. The majority of these respondents, 75.7%, reported their gender identity to be male while only 16.2% identified themselves as female. The remaining 8.1% was divided equally over a non-binary and demigender identity, as well as a gender identity that leaned more towards masculinity. The average participant age was 19 years ($SD = 2$) (Figure 1).

3.2.2 Survey Questions. Below we detail the survey questions and discuss their rationale. The survey queries for (limited) demographic data, patterns in video game playing, the importance that respondents assign to certain character customisation options, feelings and experiences with gender dysphoria in the respondents' daily life, and finally, feelings and experiences with gender dysphoria within video-game environments. As the present study is exploratory work that is focused on gaining an understanding of the transgender experience regarding character customisation, the survey design provides an initial step thereto and remains to be expanded and validated in future work.

First, the following *demographic data* is gathered: date of birth, and which gender the respondent identifies with (options: male; female; non-binary; other namely...).

Second, the survey queries for some *patterns in video game playing*. That is, the survey queries the hours per week spent on video games (options: less than 1 hour; 1–5 hours; 6–10 hours; 11–15 hours; 16–20 hours; more than 20 hours). Also, respondents fill in which video-game genres they play (action, adventure, casual, puzzle, offline RPG, online RPG, simulation, sport/racing, strategy), and how often ('never' to 'often', on a 5-point Likert scale).

Third, the survey queries for the *importance that respondents assign to certain character customisation options*. Focusing on relevant customisation options that follow from literature (cf. Section 2.4), respondents label on a 5-point Likert scale ('not important' to 'very important') the following customisation options: name, personality, abilities, hairdo, hair colour, facial features, gender, sexuality, body, height, skin colour, clothing, and accessories. Respondents also

label how much freedom in customising their player character they would prefer ('little' to 'much', on a 5-point Likert scale).

Fourth, the survey queries for feelings of *gender dysphoria in everyday life*. Respondents label to what extent they feel supported in their gender identity by certain people in their life, being: close family, friends, family (excluding close friends), classmates, and people and school (excluding classmates). This section is labeled on a 5-point Likert scale ranging from 'Not' feeling supported to feeling 'Very' supported, and the additional option 'Do not know'. Also, respondents label to what extent people address the respondent as the gender that they identify with (e.g., preferred pronouns). For this question, the respondents provide labels for the same groups as the previous question (i.e., close family, friends, etc.), and again label on a 5-point Likert scale ranging from 'Never' address as self-identified gender, to 'Always' address as self-identified gender. Finally, the survey asks if respondents have previously contacted health-care professionals regarding gender dysphoria (options: 'Yes', 'No', 'No, I am on a waiting list').

Finally, the survey queries for feelings of *gender dysphoria within video-game environments*. Respondents label on a 5-point Likert scale (ranging from entirely 'False', to entirely 'True') the following six statements: (1) Video games make me forget where I am in reality, (2) While playing video games, my gender dysphoria is less noticeable, (3) While playing video games, I feel like I am a part of that world, (4) I use video games to decrease my gender dysphoria, (5) When I play a video game, I only think of the game, (6) After playing a video game, my gender dysphoria is less noticeable.⁷ As a final question, respondents can label to which extent video games influence their mental state (for distinct genres; action, adventure, casual, puzzle, offline RPG, online RPG, simulation, sport/racing, strategy), and can do so on a 5-point Likert scale ranging from 'Not' providing any influence, to 'Often' influencing the respondents mental state.

3.3 Design of the Interviews

3.3.1 Interview Participants. Participants for the interview were recruited by including an invite at the end of the survey. Everyone from the 37 adolescents that took part in the survey, were requested to leave their email address in case they might be interested in a follow-up interview. 13 individuals indicated that they would be willing to participate in a follow-up interview, though unfortunately only 3 individuals ultimately participated. While as such the interview findings do not have statistical significance, they still yield interesting insights on feelings and experiences of adolescent transgender individuals. Two of the three participants identified as male, while one of them identified as non-binary. The average age of this group was 19 years ($SD = 1.53$).

3.3.2 Interview Procedure. The interview procedure was as follows. Participants sign the consent form detailing the research's ethical practises with regard to ensuring anonymity and privacy protection. Only afterwards, audio recording of the room & screen-capturing of

the experimenter's computer begins. Participants are given explanations about the setup: (1) the interview will take no longer than one hour, (2) in the first 30 minutes of the interview participants will play the standard *The Sims 4* video game from its onset on the experimenter's computer⁸, (3) participants are recommended to spend about 15 minutes on creating their playable avatar, and spend another 15 minutes on gameplay – if participants like to spend their time differently, or stop at an earlier time, then this is allowed. Finally, (4) participants are explained that there are no assignments or instructions on what to do during gameplay of *The Sims 4*; they may play as deemed appropriate. Subsequently, the possibilities and user-interface of the avatar creator of *The Sims 4* is explained to the participants, with mention of them being allowed to ask questions when desired. The experimenter takes notes during the participant's interactions with *The Sims 4* avatar creator and game, and afterwards asks the participants the actual interview questions (discussed next).

3.3.3 Interview Questions. Directly following the game session, participants were asked questions about topics such as player-avatar identification and gender dysphoria. Through the interview, relatively in-depth information can be gathered on the level and type of identification participants experienced while playing the game. Indeed, when compared to the observations from the game sessions, these results may offer a different perspective on the effectiveness of character customisation with regard to influencing gender dysphoria. The interview questions leverage the Player-Avatar Identification Scale by Dong Dong et al. [39], that can determine the level of player-avatar identification using 23 different items. These items are part of a four-factor model that can reliably measure a player's identification. These four factors are *feelings during play*, *absorption during play*, *positive attitudes toward avatar*, and *importance to identity*.⁹ ¹⁰ Table 1 shows these four factors and their relation to the questions from the interview. The interview questions were as follows.

Demographic data. (1) Which gender do you identify with? (2) What is your age? (3) How much time do you spend on video games?

⁸The video game *The Sims 4* was selected for its extensive customisation options that are offered in an accessible, user-friendly interface. Next to typical customisation options such as age, skin tone, fitness, hair colour & style, face shape, brow, eyes, nose, mouth, jaw and chin, makeup, facial hair, glasses, clothing, etc., the player can opt for binary (male/female) gender options or explore so-called special (non-binary) gender options – allowing the player to further customise their character's physical frame, clothing preference regardless of gender, the cadence of their voice, and pregnancy options, e.g., in the context of same-sex couples.

⁹On a related note, it is often assumed that when a player identifies with a character, they adopt their character's views and experience the video game as if they were there themselves. Consequently, when an emotional event takes place, it is the player that is actually affected by that event [23, 39]. According to a study by Cohen [10] on the identification of audiences with characters from traditional media, identification can be measured in four dimensions: empathy for the character, sharing the perspectives of the character, sharing the goals of the character, and the loss of self-awareness while playing the game. This directly links to two factors of the Player-Avatar Identification Scale [39]; feelings during play (FL) and absorption during play (AB).

¹⁰Another related effect of identification, one that can happen subconsciously, is seen through the influence of merging identities. When players wishfully identify with their character, they can, through their desire to be like the character, adopt their positive traits or incorporate these into their self-concept [39]. For example, when playing a soldier character, players may perceive themselves as being more courageous, aggressive, or dutiful [34]. This effect, however, requires the player to show a positive attitude towards the avatar, and desire some of their traits. Additionally, players should perceive these traits as ones that are important to develop in their own identity [39].

⁷Note that while we are in this case focusing on feelings of gender dysphoria within game environments, some questions on immersion were added to establish baseline levels of immersion that respondents may experience when playing video games (cf. Brown and Cairns [8]).

Table 1: Relationship of interview questions with the Player-Avatar Identification Scale (PAIS) [39].

Factor	Video games and identification	Video games and mental state
<i>FL (Feelings during play)</i>	–	Question 5, 6, 7
<i>AB (Absorption during play)</i>	–	Question 1, 2, 3, 4
<i>PA (Positive attitudes toward avatar)</i>	Question 2, 4, 5, 6, 7	–
<i>ID (Importance to identity)</i>	Question 10, 11, 12	–

(4) Have you played the *The Sims 4*, or older instalments – if so, how much?

Playing video game. (1) When do you decide to play a video game (e.g., out of boredom, to have fun)? (2) What kind of video games do you normally play? (3) How long do your game sessions generally last? (4) What makes you unable to play any longer (e.g., eye strain, too busy)?

Video games and identification. (1) With how much care do you usually create your own character in a video game? (2) Can you describe to me the character, or characters, you have created? (3) What features of that character, or those characters, do you like the most? (4) What is the most recognisable about your character, or characters? (5) What part of your character, or characters, makes you feel the proudest? (6) What did you dislike about your character or characters? (7) Are there parts of your character, or characters, that you would like to change? (8) Has your initial opinion of your character, or characters, changed throughout the game? (9) Was there anything you were unable to change in this video game? (10) Do you play other video games with character customisation capabilities? (11) How much do these characters vary across different games? (12) To what extent do these characters look like you, or look like you wish to be?

Video games and mental state. (1) Does the playing of video games positively affect your mental state? (2) Which aspect, or aspects, are the most important in this effect? (3) How noticeable are your negative thoughts while playing a video game? (4) How noticeable is your gender dysphoria while playing a video game? (5) How did it feel to you, when something bad happened to your character or characters? (6) How did it feel to you, when something positive happened to your character or characters? (7) How strongly do you feel about your character, or characters, reaching their goals? (8) How noticeable was your gender dysphoria, the last few weeks? (9) Who can support you in times of need? (10) Do you feel supported by people in your personal circle (e.g. parents, sisters, brothers, friends)?

4 RESULTS

This section presents the main findings of the survey (4.1) and the interview sessions (4.2).¹¹

4.1 Survey results

4.1.1 Patterns in video game playing. Figures 2a and b illustrate the results from the questions on patterns in video game playing

¹¹Survey or interview questions that yielded relatively little insight into the subject matter are omitted from the analysis due to space limitations, though the anonymised research data is available upon request.

and perceived effect on mental state. Simulation and adventure games, were the most popular concerning playtime (Figure 2a), with means of 2.54 and 2.43, on a scale of 1 to 5, respectively. What is more, both of these genres were reportedly also the most influential with regards to the *mental state* of respondents (Figure 2b). Sport and strategy games had the least effect on the mental state of respondents in both questions.

The two overarching role-playing game genres, online and offline role-playing games, ended up as reportedly less popular than casual games. Yet, when respondents that play games less than 6 hours a week are filtered out (i.e., the current playtime average [41, 68]), the average of casual games drastically decreases and appears to be less popular than both online and offline role-playing games. Genres like sport and strategy are the least popular among the investigated audience.

4.1.2 Character customisation. Figure 3 illustrates the survey results on the expressed importance of specific character customisation options. Gender was expressed to be the most important customisation option to transgender adolescents (with a mean of 3.41 on a scale of 1 to 5), followed by clothing ($M = 2.97$) and abilities ($M = 2.84$). Perhaps unsurprisingly, only 5% of the respondents expressed that gender customisation options are not important.

Another feature that was often reported as important, was being able to change one’s name. One respondent in particular recalled the video game *Animal Crossing*, where they, during the initial setup four years ago, had signed up using their old name. Being unable to change it back, this name reminded them of their gender dysphoria. Furthermore, the possibility to change properties like height, skin colour or sexuality was deemed the least important.

When respondents were asked how much freedom in customising their character they would wish to have, they indicated that they favoured a lot of freedom in customisation options over predefined characters. That is, 73% of the respondents reported a 4 or higher on a scale of 1 to 5, meaning they preferred much customisation freedom in their video games. Interestingly enough, one respondent mentioned the video game *Stardew Valley*. In this game, a player would reportedly be able to customise just enough of their character to be comfortably identifiable, but the customisation options in *Stardew Valley* are limited to but a few options and cannot be compared in freedom to the ones in games like *The Sims*. Another respondent specifically referred to the positive effects on their mental state of shooters like *Overwatch*, *CS:GO* or *Paladins*. These games, however, provide the player with predefined characters only. Yet, in line with the results from the survey, this respondent did appreciate the option to choose a character with the same gender as theirs.

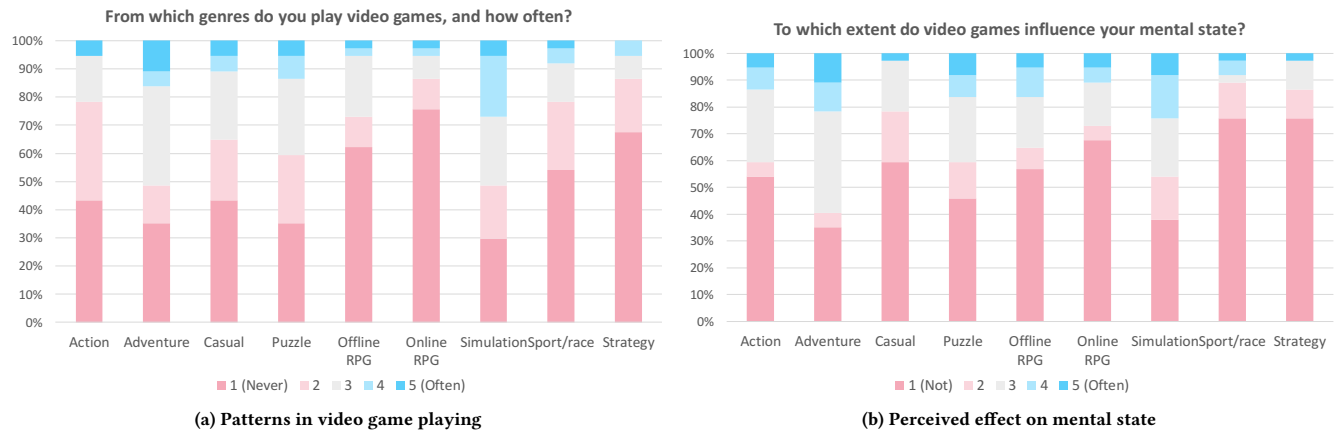


Figure 2: Survey: Patterns in video game playing & perceived effect on mental state.

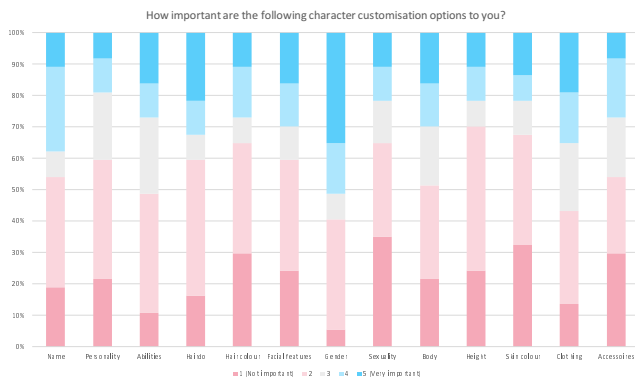


Figure 3: Survey: Importance of specific character customisation options.

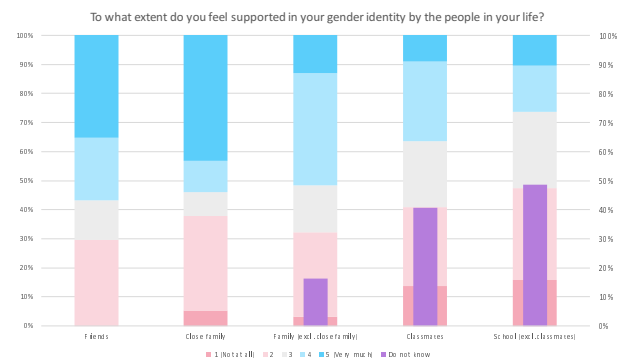


Figure 4: Survey: Gender dysphoria in everyday life; social support experienced by the respondents.

4.1.3 *Gender dysphoria in everyday life.* Figure 4 illustrates the survey results on the social support experienced by the respondents. From the five investigated categories of meaningful others that respondents were able to choose from, both their friends ($M = 3.62$) and close family ($M = 3.54$) appeared to be the most supportive of the respondents' gender identity. With a scale from 1, meaning not supportive at all, to 5, very supportive, the respondents' friends never received the lowest number. A few respondents, however, experience no support at all from their close family.

While for the friends and close family groups, no respondents filled in that this group does not know about their gender dysphoria. However, this pattern changes for the remaining three groups (family excluding close family, classmates, and people at school excluding classmates); while the reported level of social support received from these groups decreased. While not illustrated due to space limitations, the same pattern is revealed when respondents are asked about how often people use their preferred pronouns, which is another important aspect of social support from meaningful others [52]. Yet, in contrast to the previous question, classmates seem to have less difficulty with adopting different pronouns than

family (excluding close family) does. With regard to formal support, 94.6% had already contacted a healthcare professional regarding their gender dysphoria.

4.1.4 *Gender dysphoria within video-game environments.* Figure 5 illustrates the survey results on experienced gender dysphoria within video-game environments. The figure integrates data on question 2 ("While playing video games, my gender dysphoria is less noticeable"), question 4 ("I use video games to decrease my gender dysphoria"), and question 6 ("After playing a video game, my gender dysphoria is less noticeable"). Each group of bars represents data for the corresponding Likert scale category, i.e., from "False (1)" to "True (5)".

More than half of the respondents of the survey report having experienced a noticeable decrease in the presence of gender dysphoria while playing a video game (survey question 2 in this category) – prior to filling in the survey – whereas only 18.9% report not having experienced such an effect 5. Notably, in the comment field for this survey topic – allowing respondents to add additional input – 30.8% of the respondents specifically mentioned that they experience

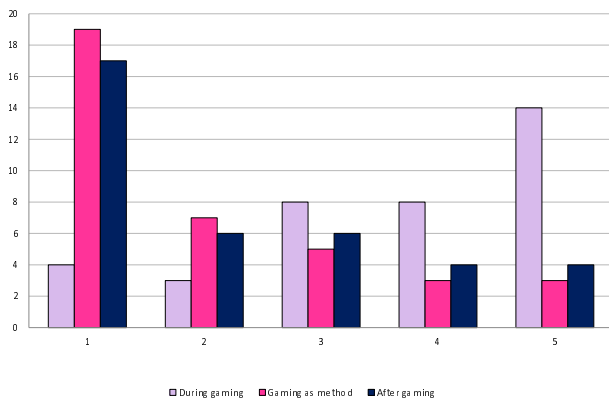


Figure 5: Survey: Gender dysphoria experienced within video-game environments. The figure integrates data on question 2 ("While playing video games, my gender dysphoria is less noticeable"), question 4 ("I use video games to decrease my gender dysphoria"), and question 6 ("After playing a video game, my gender dysphoria is less noticeable"). Each group of bars represents data for the corresponding Likert scale category, i.e., from "False (1)" to "True (5)".

a positive influence of playing as their gender identity. An additional 23.1% either reported a negative experience of the inability to change gender, or referred to the positive influence of customising their character in general. One respondent specifically commented that video games have aided them in their gender experimentation early on in their transition.

However, this effect seems temporary, as respondents generally do not recognise the positive effect after they have played a video game ($M = 2$ out of 5). One respondent noted that the effect persisted for a short time only, while another even reported an increase in the noticeability of their gender dysphoria when they quit a video game. Despite the possible (and noticeable) positive influence of video games on alleviating gender dysphoria, albeit temporary, respondents rarely consciously choose to use video games as a method to decrease feelings of gender dysphoria. Only 16.2% of the respondents indicated that they had used video games as a method before, just over 70% stated the opposite.

4.2 Interview results

4.2.1 Observations on the Sims 4 avatar creation task and gameplay.

All three participants began the *Sims 4* session by changing their character's hair. Two of the participants spent approximately 2 minutes on changing their character's face, while the other participant spent almost 6 minutes on this aspect. The entire customisation process of this particular participant lasted by far the longest, with 16.5 minutes in contrast to the other 8 or 9 minutes. This participant mentioned in the interview, that they tried to combine both genders in *The Sims 4* into a character that could identify as non-binary. *The Sims 4* initially offers players the opportunity to choose either of two (binary) genders, making it difficult for someone who identifies as non-binary, or something other than male or female, to create a character that is similar to them. They were also the only one that

used the customisation options offered regarding their character's body and build, used for changing muscle size and fat distribution. Afterwards, they also said they forgot to use *The Sims 4*'s special (non-binary) gender options¹², but would have liked to use those in order to fully customise their character to something they could identify with. Both of the other participants, who identified as male, did not seem to need these gender options and were easily able to select their gender identity.

The Sims 4 also offers players the opportunity to select various outfits for their character to wear on different occasions. Only one of the participants took this opportunity, while the other two only chose a general outfit for their character. One participant ascribed this to the amount of time they were given, as they would have paid more attention to their customisation process if they would have had the chance. This participant spent nearly 2 minutes putting an outfit together, while the participant with the longest customisation process spent double that amount. The participant that dressed their character for every occasion in *The Sims 4*, took the longest with 5.5 minutes.

Participants all spent the least time on choosing their character's name and abilities, or "traits". One participant spent an extraordinarily long time on choosing their name, 2 minutes. The other two, however, did not spend more than half a minute before they continued with the game. Participants spent either 1 or 0.5 minutes on choosing the traits of their character, though one participant noted that they would have spent more if they would have had the time.

4.2.2 Video games and identification. Interestingly, all three participants noted hair as one of their favourite aspects of the character that they had customised. They also felt proud of the way their outfits were put together. One participant made use of the gender options specific to *The Sims 4* and dressed up their masculine character using feminine clothing. Even though they noticed that some feminine shapes, specifically breasts, are transferred to a masculine body when wearing these clothes, they were still proud of the expressiveness of their final outfit. Another participant especially liked the height of their character.

After playing with their characters for a while, two of the participants noticed something in their characters' face that they would have liked to change. Aside from the remaining feminine shapes, the other participant noticed something "off" in the voice of their gendered character. The first two participants reportedly lacked the specific knowledge on *The Sims 4* to fix this issue, while the other participant just failed to notice the tone of their character's voice during the customisation process.

With regard to character features that participants were unable to change, one participant would have liked to see more clothing and accessories using rainbows in their design. Additionally, in order to specifically change the *pronouns* used throughout the game, they would have liked to see more available gender options, like *non-binary*. At the time of the study *The Sims 4* only offered he/him and she/her pronouns. Another participant preferred to have the ability to change the height of their character, which is

¹²While *The Sims 4* initially provides only two gender options (male/female), the special gender options most notably enable non-binary character customisation. This setup nevertheless is a limitation of the present study, as is discussed next.

currently only possible through changing their age. They, however, noted that this is a rare feature in video games in general. The last participant suggested that there were too few options for changing their character's hair. All participants acknowledge that they created an idealised character in *The Sims 4*. For one participant, their character was thin and had a beard, another aspires to be just as expressive as their character. Nevertheless, numerous features were also similar to the participants; features believed to reflect the general personality of the participant, and/or more general features such as hair colour.

Aside from the characters created for the interview, two participants reported that their characters usually share certain features in every customisable video game that they play. One participant specifically mentioned the thinness and the biological sex of their characters, two features that are part of their ideal image. The participant that recognised no similarity between the current character and the characters they usually create, explained this by comparing *The Sims 4* to games like *Skyrim* or *Oblivion*. That is, since these two games offer much more detailed customisation options, characters reportedly end up looking very different.

4.2.3 Video games and gender dysphoria. The video games that were considered to positively influence one's mental state differ for each participant. One participant in particular says that they can only experience this positive effect when they play non-competitive, non-frustrating video games. Likewise, another participant noted the decrease of this positive effect when the game depicts a stressful situation. The third participant, however, would rather play video games like *Skyrim*, where the fights distract him from his thoughts. He also sometimes consciously chooses to play a video game when he feels bad.

This positive effect could also be observed with regard to their gender dysphoria, as two participants reported a decrease in its presence while gaming. The effect appears to be coupled to the subjective experience of gender dysphoria, as the one participant that reported experiencing relatively little gender dysphoria, correspondingly reported to be unsure about decreases of gender dysphoria while gaming. Interestingly, one participant expressed not responding to a negative situation happening to their player character, citing sympathising but not personally identifying with the character. This once again highlights the importance of identification with player characters, and the cognitive- and emotional effects that it may yield when purposely utilised by game designers and researchers.

5 DISCUSSION

In the present paper, we set out to understand in what manner character customisation of a video game could have an influence on the mental state of transgender players. Current literature shows that a player's character can indeed be used to experiment with gender-related struggles in a safe environment. To this end, studies suggest that the character choice of transgender players is based on an alignment with their actual, self-identified gender identity; as a means of both experimentation and wishful identification. However, no specific research has been conducted to find how the portrayal of a video game character's gender specifically influences the player's gender dysphoria (i.e., the distress a person feels due to a mismatch

between their gender identity and their sex assigned at birth). As such, the present paper contributed (1) an overview of selected background works on the interplay of gender and character customisation, and (2) a qualitative study that includes 37 transgender adolescents between the ages of 16 and 23. Findings of the study extensively discussed to what extent – and to what effect – transgender adolescents use the possibility to customise their character as a means to experiment and/or come to terms with their gender identity.

5.1 Summary of the research findings

While we wish to emphasise that the present research is exploratory in nature, and that final answers cannot be provided based on solely the performed literature review, survey, and interviews – it is clear however that the present research does yield insights that may be valuable for further study. That is, it explores answers to the following questions.

5.1.1 How is gender customisation employed in video games? When offered the possibility to change their character's gender, players, especially the male players of our study, tend to use this option to create a character of the opposite gender. This so-called gender swapping can provide male player's with a social benefit through positive behaviour from other players in a male-dominated domain such as video games. Female players, on the other hand, sometimes gender swapped in an attempt to hide their actual gender (e.g., when behaviour of others is experienced as harassment). Players may also gender swap in order to follow some ideal set by either the player themselves or the community of a video game. In that case, some roles might be exclusive to female characters, while others might fit a male character better. Finally, the ability to change one's gender through a virtual character can be used by players to safely experiment with their gender identity. In the real world, this is often met with hostility or misunderstanding. In a virtual world, however, the line between the gender of the player and that of the avatar blurs, and pronouns may more naturally be adapted too.

5.1.2 Does the customisation of a character in a video game influence a person's mental state? Both the background literature and survey indicates that character customisation can affect a player's mental state through either a sense of control and autonomy, increasing their enjoyment of the game, or identification, which facilitates and amplifies behaviour and recall through video games. Identification also increases the enjoyment of certain media, such as video games. A distinction can be made between similarity and wishful identification. The first happens when someone identifies with a character because of their similar qualities. The second indicates a wish to act and look like a character, and, since players generally use their character to create an ideal image, is most applicable to the customisation process of video games.

5.1.3 What specific features in the customisation of a character in a video game are important to transgender adolescents? The survey results confirm the expectation that gender is the most important customisable feature to transgender adolescents, followed by clothing and abilities. Being able to change a character's name was also seen as important, specifically when this name mirrors the wrong gender identity. Interestingly enough, hairdo and hair colour were,

in contrast to what was indicated in the literature review, only slightly more popular than the lowest-scoring options height, skin colour or sexuality. Respondents also clearly favoured extensive customisation options over predefined characters.

5.1.4 Do transgender adolescents experience decreased gender dysphoria while playing video games? The majority of the respondents experience a noticeable, but temporary, decrease in the presence of their gender dysphoria when playing a video game. Through detailed justification provided by some respondents, this positive effect can be linked to the ability to change the character's gender to match their own gender identity. But despite the noticeable influence of video games, respondents rarely use video games as a method to decrease the presence of their gender dysphoria.

5.1.5 To what extent does the choice of a player character's gender reflect the gender identify of transgender adolescents? In line with the literature review and the results from the survey, all participants of the interview created a character that had a similar gender identity to their ideal self. The one participant that identified as non-binary mentioned their struggles and discontent regarding the two gender options of *The Sims 4*, male and female. By combining features from both genders, which has been possible since a 2016 update to *The Sims 4*, they attempted to create a character that could identify as non-binary. Besides this similarity, the participants also recognised an ideal image in the characters they created. One participant in particular usually creates a character that is thin and biologically male, both elements matching their actual gender identity.

5.1.6 Which customisation options should be provided in order to positively affect the mental state of transgender adolescents? Besides the possibility to extensively change their character's gender, including options that differ from the binary system, the importance of various other customisation options was observed. Matching the literature review, one participant mentioned the effect of pronouns on the mental state of transgender adolescents. It was expressed that by using the correct pronouns, they will feel supported and experience less negative effects from their gender dysphoria. The reported importance of being able to change clothing was also in agreement with data from the literature review and the survey. Abilities, or "traits" in *The Sims*, were mainly changed to match the participants' own personality. In contrast to the survey, however, all three participants noted hair as one of their favourite aspects of the character that they had customised.

5.2 Limitations

5.2.1 The Sims 4. The video game *The Sims 4* was selected for its extensive customisation options that are offered in an accessible, user-friendly interface. Notably, *The Sims 4* offers both binary (male/female) as well as non-binary character customisation, thereby connecting to a wide breath of possible gender identities. However, as noted in the interview results, *The Sims 4*'s design choice to compartmentalise these possibilities into binary options and 'special' gender customisation options, was shown to be overlooked or confusing to some participants – thereby affecting specific interview results. While it has been informative to nevertheless learn of the impression that participants had when confronted with

such a palette of customisation possibilities, in hindsight we as experimenters should have provided more insight into this particular quirk of *The Sims 4* video game.

5.2.2 Exploratory method. The present paper is exploratory in nature, building upon the unique opportunity to perform a qualitative study with 37 transgender adolescents between the ages of 16 and 23, and follow-up interviews with three transgender adolescents. Beyond the number of available participants, the survey and interview are affected by several limitations.

That is, while extensive work has gone into reflecting on appropriate survey questions, they at present are not validated and may also need to be extended. For instance, it would be interesting to counterbalance several indirect questions with the addition of direct question, such as "Does avatar and gender customisation in a game help you to cope with gender dysphoria?" Also, while numerous interview questions deepen the survey and connect to literature, the interview's general setup may introduce some biases. I.e., how is the interview modulated by it being preceded with a task in *The Sims 4* video game? Is a structured interview most desirable for allowing transgender participants to voice their reflections, or would a different method allow for more unfiltered and free reflections? Also note that we provided participants with the option to select a non-binary gender or self-describe their gender, but realise that it might have been sensitive to also include a 'prefer not to disclose' option, as per community suggestions [66]. Such validation and reflections should be a first step towards future work.

5.3 Concluding remark

In conclusion, it was found that, aside from the potential positive effect of video games on one's mental state in general, transgender adolescents can and will use the possibility to customise their character as a means to experiment with their gender identity. This was in line with the literature review and was supported by the results of the survey and interviews. By being able to change their character's gender, clothing and abilities, transgender adolescents are able to extend, expand, or blend their current self and ideal image.

What is more, more than half of the respondents of the survey report having experienced a noticeable decrease in the presence of gender dysphoria while playing a video game. This is a valuable insight, confirming the strong potential for employing video games as an intervention method for reducing the negative effects of gender dysphoria. Also, it highlights the importance of identification with player characters, and the positive effects that it may yield when purposely utilised by game designers and researchers.

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