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Characterizing Experience and Regulation of Sexual Harassment Experiences Among Female Gamers in First-Person Shooters

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Gamers in First-Person Shooters

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Abstract

Female gamers frequently experience harassment from other players while playing online first person shooters and are frequently alienated from the online gaming community. Sexism within the video game community also manifests through the underrepresentation and sexualization of female characters, both of which have been shown to increase sexist attitudes (Bushman and Laroi, 2019, Dill et al 2008). The present study examined harassment towards women while playing online video games, as well as effects of harassment on mental health and gender masking behaviors. Additionally, the present study examined how the gender ratio of characters within a game affects harassment towards female players. First, I hypothesized that women playing online first person shooter games in which there is a higher percentage of female characters will experience less harassment than games with fewer female characters. I also hypothesized that the amount of harassment women face while playing a first person shooter game is correlated negatively with mental health outcomes, such that more frequent harassment will be associated with poorer mental health (e.g., depressive symptoms and anxiety). Lastly, I hypothesized that women who more readily experience harassment while playing a first person shooter game will be more likely to conceal their gender and engage in other protective behaviors to avoid harassment. Results indicated no effect of gender ratio on harassment. I also found no correlation between harassment and mental health. However, there were strong relationships between harassment and gender masking, such that female players who experienced more harassment were more likely to mask their gender from other players. The results highlight several ways in which women are affected by sexism within the video game community. Additional implications and limitations are discussed.

Introduction

Sexism in the video game community

It is no secret that women face gender-based discrimination in almost every area of their lives (Swim and Heyers, 2009). They experience discrimination in the workplace, public spaces, and their personal lives (Fitzgerald et. al., 1997, Swim and Hyer, 2009). Women are not free from discrimination even during leisurely activities. One example of this is female football fans, who are often ostracized from the community (Dunn, 2014). Dunn notes that women have historically been unwelcome in football, and as such are often seen as inauthentic, untraditional, and unusual by male and even other female football fans.

While football has had a long history, video games—especially online multiplayer games—have only become culturally relevant very recently. Yet despite the fact that the online video game community's inception was in the modern era, many longstanding tendencies have found their way into these virtual contexts. For example, 2014 was the year of #GamerGate, in which game journalist Zoe Quinn was viciously harassed by the online video game community after one of her ex-boyfriends falsely claimed she cheated on him and slept with multiple people in the gaming industry for leverage (Dewey, 2014). This sparked a significant culture war across online game communities: one side wanting more inclusion and diversity within video games, and the other not wanting games to change. Fueled by stringent misogyny, this movement revealed anti-feminist sentiments within the gaming community. Those who spoke out on issues of sexism were sarcastically labelled as "social justice warriors."

Women who play online games are well acquainted with harassment from other players. Several studies have found that female-presenting voices are three or four times as likely to receive negative comments from other players when communicating over voice chat (Kuznekoff

and Rose, 2012, Matthew, 2012). These comments are often gendered insults, such as name calling, implying inferiority (e.g., "Oh no, there's a girl on our team!"), or derogatory jokes about gender roles (e.g., "go back to the kitchen!") that serve to reinforce western gender stereotypes. When not directly insulted, female gamers are verbally assaulted with rape threats or sexist jokes. Female gamers are also often subjected to unwanted romantic and sexual advances. When asked if sexism is prevalent within the gaming community, 79% of all participants said yes (Matthew, 2012). The same study also found that 63.3% of female gamers and only 15.5% of male gamers have experienced sexism while playing online. This fosters a hostile environment for women, making them feel unwelcome or as if they are encroaching on a male space, despite the fact 41% of people who play video games are female (Matthew, 2012).

There are many reasons why women are discriminated against at much higher rates than men within the gaming community. One explanation revolves around social role theory (Eagly & Woods, 2016). Social role theory explains mechanisms behind the perpetuation of one category of gender norms: socially sanctioned roles. In organized society, men and women are assigned different roles. These are based on somewhat arbitrary and flexible assumptions about which sex is good at which tasks: caregiving, providing, protecting, and so forth. However, because these gender roles are often inflexible within society, stereotypes and expectations over time become reinforced without actual logic behind this normalization.

There is no biological basis for the reason that women are primarily caregivers in an organized society. This is evidenced by the growing number of fathers who opt to stay at work while their wives go to work (Pew Research Center, 2019). Although one would think that there is even less of a biological basis for gaming to become gendered, video gaming is unfortunately often seen as a male hobby (Salter and Blodgett, 2012). One of the reasons for this norm is

aggressively gendered marketing that video games have seen since they started being advertised (Lien, 2013). Advertisements since the 1970s—since the inception of video games themselves—have been teaching people from a young age that video games are primarily for boys, discouraging girls from pursuing the hobby. Additionally, there is a perceived gender norm of computers as a male hobby, meaning women using computers are often seen as less competent than men (Kendall, 2002). Thus, one of the main characteristics of a gamer as seen by society is the male gender.

This leaves no room within the sphere of video games for girls—as the internet meme goes, "there are no women on the internet". According to social role theory, one of the ways in which gender affects one's perception of themselves is by setting people up with expectations for the behavior of themselves and others. People learn very quickly that behaviors which are seen as incongruent with their gender are not received well by others, and often results in ridicule and exclusion (Eagly and Woods, 2016). This phenomenon is often seen in online gaming—as I mentioned earlier, women are more than three times more likely to be bullied by other players over voice chat. The gendered nature of the insults women receive is indicative of the masculine norms within the gaming community and its tendency to punish anyone for acting feminine.

Researchers Anastasia Salter & Bridget Blodgett highlight the state of gender discourse within the video game community through analysis of the "Dickwolves" incident (2016). Penny Arcade, a popular gaming-focused webcomic, published a comic with a rape joke, which insinuated that a fictional slave character is raped to sleep every night by "dickwolves". This created a heavy amount of controversy, with the creators of Penny Arcade doubling down and even creating t-shirts commemorating the comic. What is notable about this incident is the pushback from the gaming community, which, similarly to the GamerGate controversy, was

centered on maintaining the male identity of a gamer. Women who spoke out about the normalization of sexism and rape jokes were met with backlash; once again silenced within their own community. Use of the words "safe space" and "trigger warning" were also brought into play, but only to mock feminism. The gaming community understood that the boundaries of the male gamer identity was beginning to expand, and pushed back by purposefully making the community hostile towards women who were fighting for their identity as a gamer.

Female characters

Part of the reason that women are fighting for a positive identity within the gaming community is because current women's roles within the gaming community are sexist. As stated earlier, women are not allowed to be "real gamers." Women are stereotyped to only play casual games, which makes them seen as lesser. If they play "real" games, such as first person shooters, they are seen as inferior in skill to male gamers (Gestos et al, 2019). In their article on Dickwolves, researchers also proposed another role of women within the community is that of the enemy: "From the explicit creation of teams to oppose female voices, the reduction or removal of safe spaces for women to participate in the dominant public, and deliberate reframing of discourse to avoid common ground, women… were made to feel ostracized and unwelcome" (Salter and Blodgett, 2016).

Another role women have within the gaming community is that of a sexual object. The sexual objectification of women can be seen in many forms of media, including television, advertising, music videos, social media, and the arts. Studies of video game content has found that women are systematically underrepresented in games, and the few female characters that exist are often objectified and oversexualized (Lynch et al., 2017). Female characters frequently are dressed in ways which highlight or even partially expose their buttocks and breasts, even if it

is inappropriate for the task within the game (an example being that female fantasy armor often leaves the character's stomach, chest, and thighs exposed, despite the fact that this would not protect them from being stabbed or shot). Female characters which are not sexualized are frequently love interests for the male protagonist, cute and innocent, or in need of rescue by the strong male character (Galdi et al., 2013). In fact, one of the first video games to become a household name in the 1980s, Super Mario Bros., features the only female character, princess Peach, as a literal damsel in distress.

The way in which women are depicted in the media has consequences for the way in which women are viewed and treated by others (Seabrook et al., 2019). A recent experiment (Galdi et al., 2013) has found that men who are exposed to television which has objectifying depictions of women are more likely to engage in gender-harassing behavior, including a higher likelihood of intending to sexually coerce women as well as a higher likelihood of sending sexual and/or sexist messages to a women online. The same study also found that exposure to objectifying television also predicts a higher likelihood of conforming to traditional masculine gender norms.

Similar to the previous study which showed that watching objectifying television changed men's behavior, there have been numerous studies exploring this effect within the realm of video games (Bushman and Laroi, 2019, Dill et al 2008). One study asked men to play Street Fighter with characters who were either modestly clothed or in revealing bikinis and tracked their acceptance of sexual or sexist jokes towards women. Those who played games with sexualized female characters told more sexist jokes to female players than those who played the non-sexualized version. This implies that the presentation of female characters within video games affects one's perception of gender norms.

As described earlier, video games have no shortage of sexualized content. And given that sexualized content is shown to directly affect behavior and attitudes towards women, it is no surprise that women feel objectified and, once again, ostracized from their own community. Unfortunately, feeling ostracized is not the only outcome. Not only are sexualized video games related to higher amounts of harassment towards female gamers, but they also predict higher self-objectification and lower self-efficacy (Gestos et al, 2018). Viewing female characters depicted in a sexist manner can cause women to internalize the gender expectations the character promotes, such as body image and efficacy. As such, both male and female gamers have lower views of female efficacy. With the amount of sexualized video games currently on the market, it is thus not surprising that the gaming community leans towards sexism, and that it promotes rape myth and toxic masculinity.

The integrated model of sexual harassment and mental health

In 1997, researchers studied the antecedents and consequences of being sexually harassed in the workplace (Fitzgerald et al). They found that the predictors of sexual harassment was job gender context (the gender ratio of your workplace and the nature of tasks) and organizational responsiveness (the tolerance of sexual harassment within a workplace). In online gaming, because female gamers are often afraid to use ingame voice chat (Fox and Tang, 2015), people mostly hear male voices. Additionally, the nature of gaming itself is commonly seen as a male endeavor. Lastly, one of the studies mentioned earlier highlights the phenomenon where sexualized video games, of which there is a large ratio, can promote sexist attitudes, reinforce hypermasculine stereotypes, and promote tolerance of sexist and sexually inappropriate speech towards female gamers (Burnay et al, 2019). The combination of all of these factors make gaming a highly masculine space; one which promotes masculinity as the standard and also

denigrates anything and anyone feminine. As per Fitzgerald's integrated model, this

hypermasculine norm potentially predicts a higher amount of sexual harassment women

experience within the gaming community (Fitzgerald et al, 1997).

Another important aspect the Integrated Model of Sexual Harassment is the study of

outcomes from being sexually harassed. The researchers found a significant relationship between

sexual harassment and psychological as well as physical outcomes. Women who were sexually

harassed within their workplace were more likely to score higher on measures relating to mental

health and PTSD symptoms, and lower on measures relating to health and satisfaction

(Fitzgerald et al, 1997). This result is also consistent with a study done on nurses in India, which

also found that sexual harassment was a significant predictor of depression, anxiety, and stress

(Mushtaq et al, 2015).

What we can infer from Fitzgerald's model is that a male gender context predicts sexual

harassment, which in turn predicts mental health outcomes. There seems to be a similar trend

within gaming, although the relationship is less researched and therefore more correlational than

causal in this context.

Gender masking

Given that the video game community is very toxic towards female gamers, many female

gamers have adopted strategies in order to avoid being harassed. One strategy involves hiding

their gender. Methods of gender masking include using a gender neutral or masculine screen

name, using a male avatar (when one has options for the gender of their character), and/or

attempts to pass as a male (Fox and Tang, 2016). Presenting as female disrupts the male norm of

gaming; the very act of existing as a woman in a gaming environment is rebelling against gender

norms. This is why, to avoid the possibility of contention, some female gamers prefer to keep

their gender hidden. Other ways in which female gamers respond to harassment include avoidance of online gaming, denying the severity of the harassment, blaming one's self for their harassment, and seeking help from other players.

Gender masking can be seen in other male-dominated fields as well. An example of this is female conductors (Bennett et al, 2019), who often mask their gender in order to be taken more seriously within their field. Although this is a different context for sexism and gender masking, it highlights how women in many areas of life and work are not taken as seriously as men, meaning they must either accept their gender and the fact that they will be harassed, or try to avoid the harassment by rejecting their identity as a woman.

The present study

We can conclude from the existing literature that women are marginalized within the video game community (Fitzgerald et. al., 1997, Kuznekoff and Rose, 2012, Matthew, 2012). In my study, I will be measuring how this marginalization and sexism affects female gamers. My first hypothesis is that female gamers playing first person shooter games in which there is a higher ratio of female characters will experience less frequent harassment than games with fewer female characters. As discussed earlier, female characters' bodies are more likely to be sexualized than male bodies (Lynch et al., 2017, Galdi et al., 2013), and sexualization of women's bodies in a video game context can cause men to be more likely to send sexual and sexist messages to female players (Galdi et al., 2013), as well as reinforce masculine gender norms within a gaming context (Galdi et al., 2013). While there have been studies to show that sexualization affects behavior, there have been no studies which study the effect of character demographic on the harassment of players.

The social role theory describes two drivers behind sexual harassment: gender context and organizational responsiveness (Fitzgerald et. al., 1997). The gender context, which is the ratio of men to women, is heavily skewed towards men in terms of video game characters, meaning that the players most often see male characters. We can also see, as described above, that the online video game community tends to maintain the gender image of a gamer as male, giving an even heavier male gender context to video games. The evidence of how a male gender context affects harassment, as well as a lack of research about gender ratio and attitudes, is why it is important to study if gender ratio of characters plays a role in gendered harassment.

My second hypothesis predicts that the amount of gendered discimination women face while playing a first person shooter game is correlated negatively with mental health outcomes. There are numerous studies (Fitzgerald et. al., 1997, Mushtaq et al, 2015) showing that sexual harassment is known to have negative mental health outcomes, including depression, anxiety, and general stress (Mushtaq et al, 2015). Going with the general goal of this study, measuring this will help us better understand women's experiences while playing online video games.

Women who experience harassment, both in the context of video games (Fox and Tang, 2016) and not (Bennett et al, 2019), are more likely to mask their gender in order to avoid conflict or contention. Thus, for my third hypothesis, I posit that women who experience harassment while playing a first person shooter game are more likely to mask (i.e., conceal) their gender.

Methods

To gather data, I posted a Qualtrics survey on the Prolific platform, which coincidentally—and fortuitously—is comprised of a non-trivial proportion of gamers (MacIntyre, 2021) . The survey was limited to women over the age of 18 who play either Overwatch (OW) or Call Of Duty: Modern Warfare (COD). In order to measure whether or not the gender ratio of characters affects the amount of harassment women receive, I have selected these games specifically for comparison against one another. This is because they each contain different gender ratios of characters (COD: 20% of characters are female, Overwatch: 47% of characters are female).

Before completing the survey, participants will complete several questionnaires: the State Trait Anxiety Index (STAI) to measure anxiety, the personal health questionnaire depression scale (PHQ-8) to measure depression, and the perceived stress scale (PSS) to measure daily stress. These measures were used to record the mental health of the participants, which is one of the variables for my second hypothesis.

The survey also recorded the gaming habits of the participants. It measured their weekly playtime and their game of choice. The survey also recorded the amount and type of harassment players endure. There are four questions measuring harassment, each of which assess a specific aspect of the harassment: insults ("Approximately how often do you experience gender based insults/jokes when playing [participant's game of choice]?), unwanted advances ("Approximately how often do you experience unwanted sexual/romantic advances when playing [participant's game of choice]?"), sabotage ("Approximately how often do your teammates deliberately sabotage your/your team's gameplay because of your gender?"), as well as general perception of the gaming environment ("Do you think [participant's game of choice]

is a hostile environment for female-presenting players?"). A "harassment composite" score will be created for comparison purposes in which responses to the first three questions, which are measured in a Likert-style frequency scale, are averaged. The survey also measured gender masking behaviors. Participants were asked to indicate in a Likert-style scale how frequently they hide their gender while playing online. They were also asked to indicate from a list the behaviors they engage in to hide gender (using a masculine screen name, avoiding voice communications, avoiding text communication, presenting as male when communicating with other players, and only playing male characters). This amount of behaviors selected by the participant was summed to create a masking behavior index score.

After conducting a power analysis, it was determined that to ensure 80% statistical power to detect small-to-medium effect sizes for correlations (e.g., r values of .2 to .3) 100 participants were needed.

Results

Hypothesis 1: Gender Ratio and Harassment

For my first hypothesis, I investigated the relationship between the percentage of female characters within each game (Overwatch and Call of Duty: Modern Warfare) and the amount of harassment endured by female players of the aforementioned games. In Overwatch, 47% of characters are female, and in Call Of Duty: Modern Warfare 20% of the characters are female. An independent samples t-test revealed that harassment composite scores did not differ as a function of the gender ratio of the characters in a particular game, $t(97)=0.105$, $p=0.916$, $d=0.02$. Neither each question on its own nor the harassment composite scores showed any significant relationships: insults ($t(97)=0.137$, $p=0.891$, $d=0.03$), advances ($t(97)=-0.370$, $p=0.712$, $d=-0.08$), or sabotage ($t(97)=0.570$, $p=0.569$, $d=0.12$).

Hypothesis 2: Harassment and Mental Health

For my second hypothesis, I investigated the relationship between the amount of harassment endured by female gamers and mental health outcomes. To measure this, I compared the aforementioned harassment composite score with several mental health measurement tools: the State Trait Anxiety Index (STAI), the personal health questionnaire depression scale (PHQ-8), and the perceived stress scale (PSS). The t-tests did not reveal any significant relationships between harassment and the STAI ($r(97)=0.004$, $p=0.97$), harassment and the PHQ-8 ($r(97)=-0.082$, $p=0.42$), or between harassment and the PSS ($r(97)=-0.010$, $p=0.92$) .

However, I did find relationships consistent with Hypothesis 2 when looking at the measure of perception of the gaming community. Specifically, there was a modest positive relationship between perception and the PHQ-8, $r(97)=0.177$, $p=0.080$ (See Figure 1) and between perception (see figure 1) and the STAI, $r(97)=0.186$, $p=0.065$ (See figure 2).
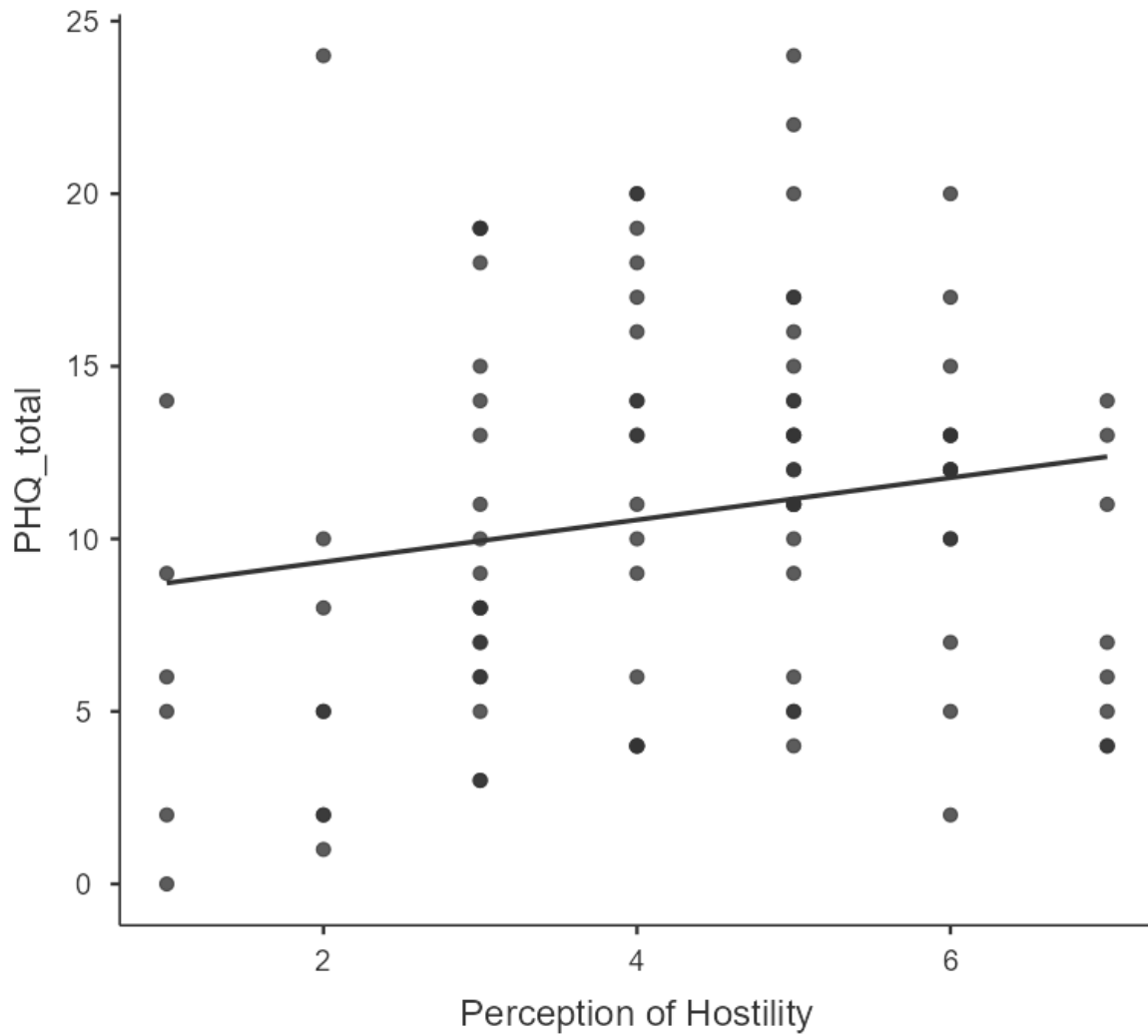
Figure 1: the relationship between perception of hostility within the environment of one's

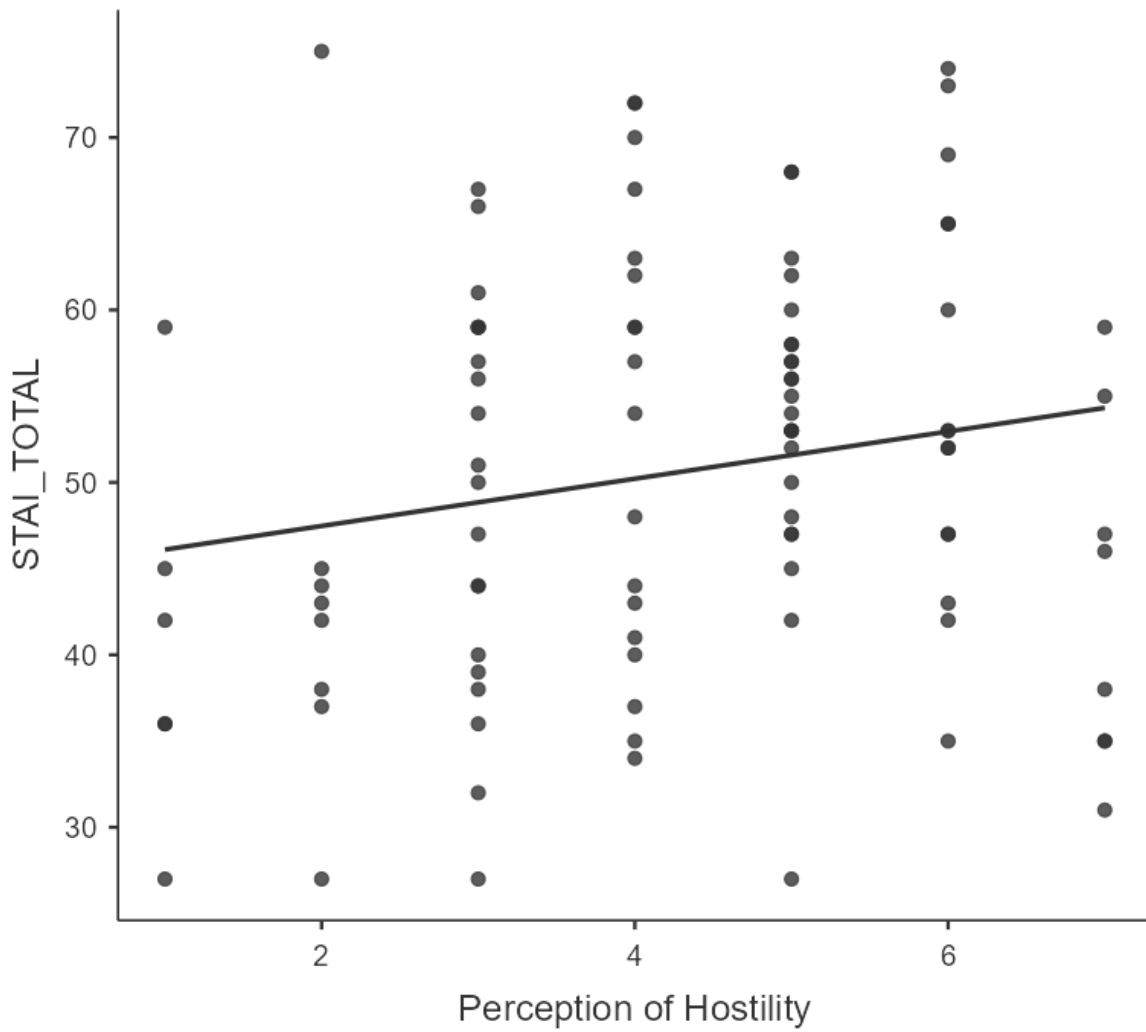*game of choice and the personal health questionnaire.*

Figure 2: the relationship between perception of hostility within the environment of one's game of

choice and the state trait anxiety index.

Hypothesis 3: Harassment and Gender Masking

For my third hypothesis, I investigated the relationship between harassment and masking behaviors. To measure masking behaviors, I asked participants to indicate in the survey how often they hide their gender from other players, which was used as a measure of frequency. I also asked participants to indicate all the kinds of gender masking behaviors they engaged in, which I summed and used as a measurement of the amount of gender masking behaviors one engages in. I then compared these individual measures to both the harassment composite score and each individual question relating to harassment.

The data revealed that there are significant relationships between the harassment composite score and frequency of gender masking ($r(97)=0.242$, $p=0.016$) (see figure 3) and between the harassment composite score and the amount of gender masking behaviors one engages in ($r(97)=0.280$, $p=0.005$) (see figure 4), such that those participants who experienced higher levels of harassment also tended to engage in more frequent masking behaviors. When looking at individual measures of harassment, I also saw significant relationships between insults and the amount of gender masking behaviors one engages in ($r(97)=0.258$, $p=0.01$), between unwanted advances and the amount of gender masking behaviors one engages in ($r(97)=0.207$, $p=0.039$), between unwanted advances and the frequency of gender masking ($r(97)=0.280$, $p=0.005$), and between sabotage and the amount of gender masking behaviors one engages in ($r(97)=0.261$, $p=0.009$).

Although not related to my main question, I also uncovered significant relationships between perception of hostility within the game and frequency of gender masking ($r(97)=0.349$, $p<0.001$) (see figure 5) and between perception of hostility and the amount of gender masking behaviors one engages in ($r(97)=0.396$, $p<0.001$) (see figure 6).
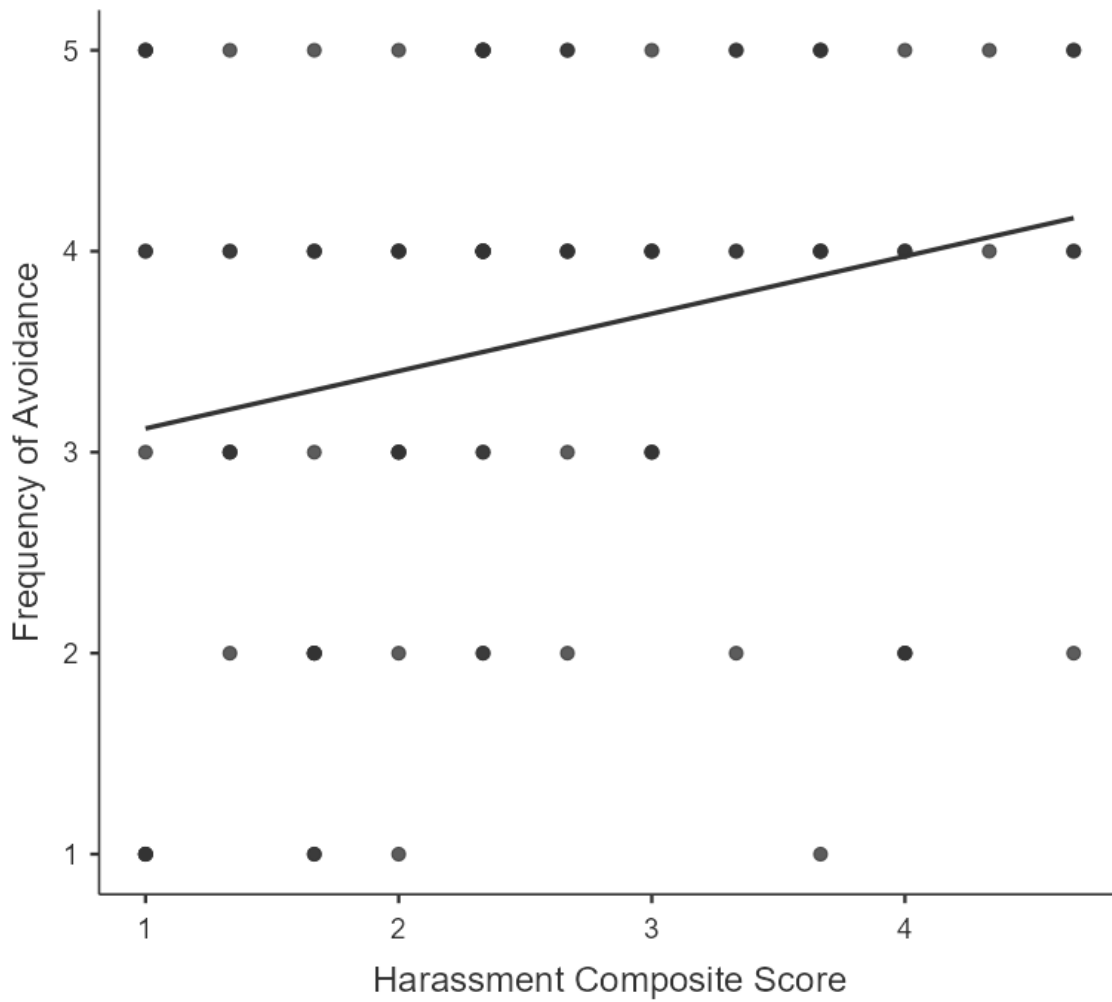
Figure 3: the relationship between the frequency of avoidance of revealing one's gender to other players (gender masking) and the total harassment composite score, which was compiled using separate measures of insults, unwanted advances, and gameplay sabotage.
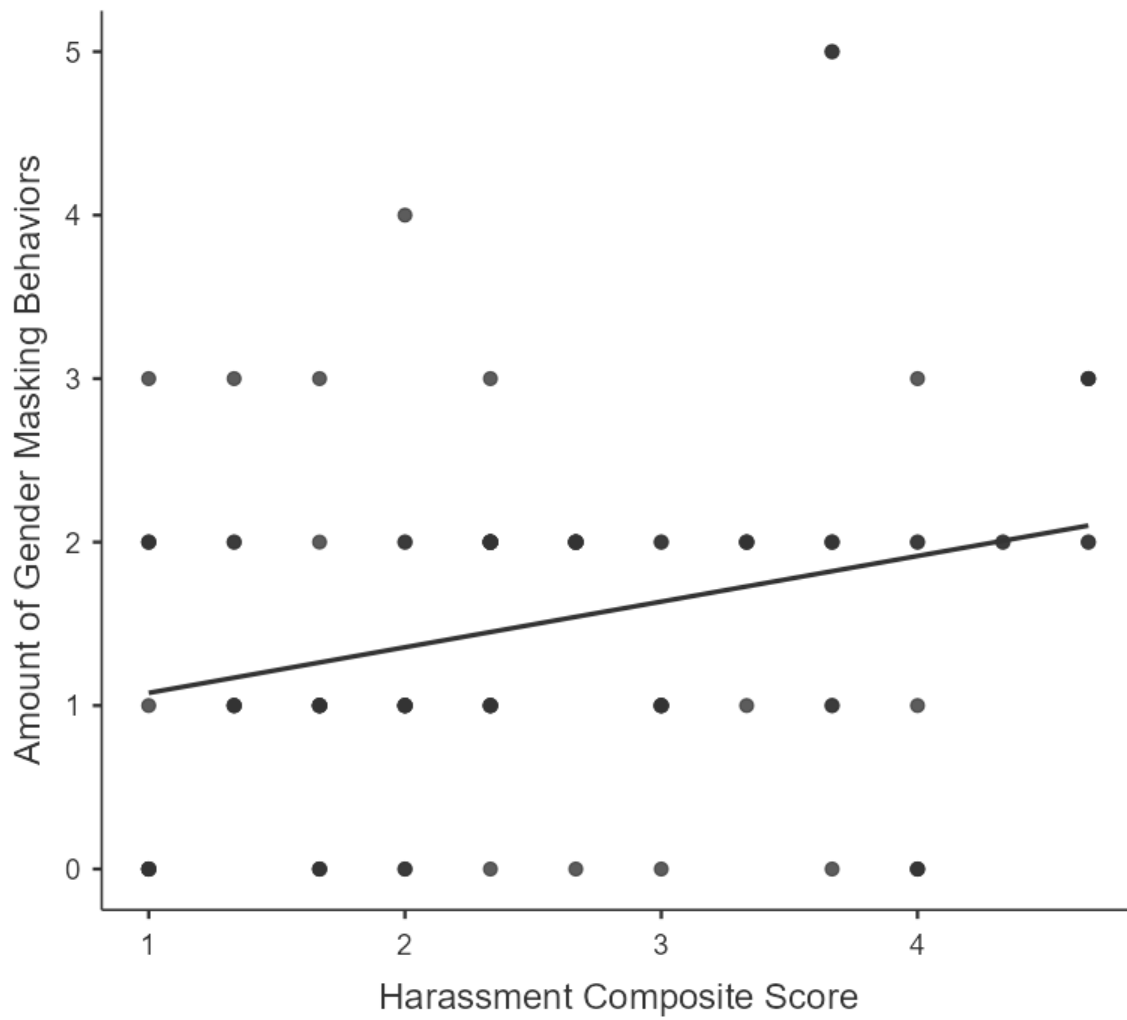
Figure 4: the relationship between the amount of gender masking behaviors one engages in and the total harassment composite score, which was compiled using separate measures of insults, unwanted advances, and gameplay sabotage.

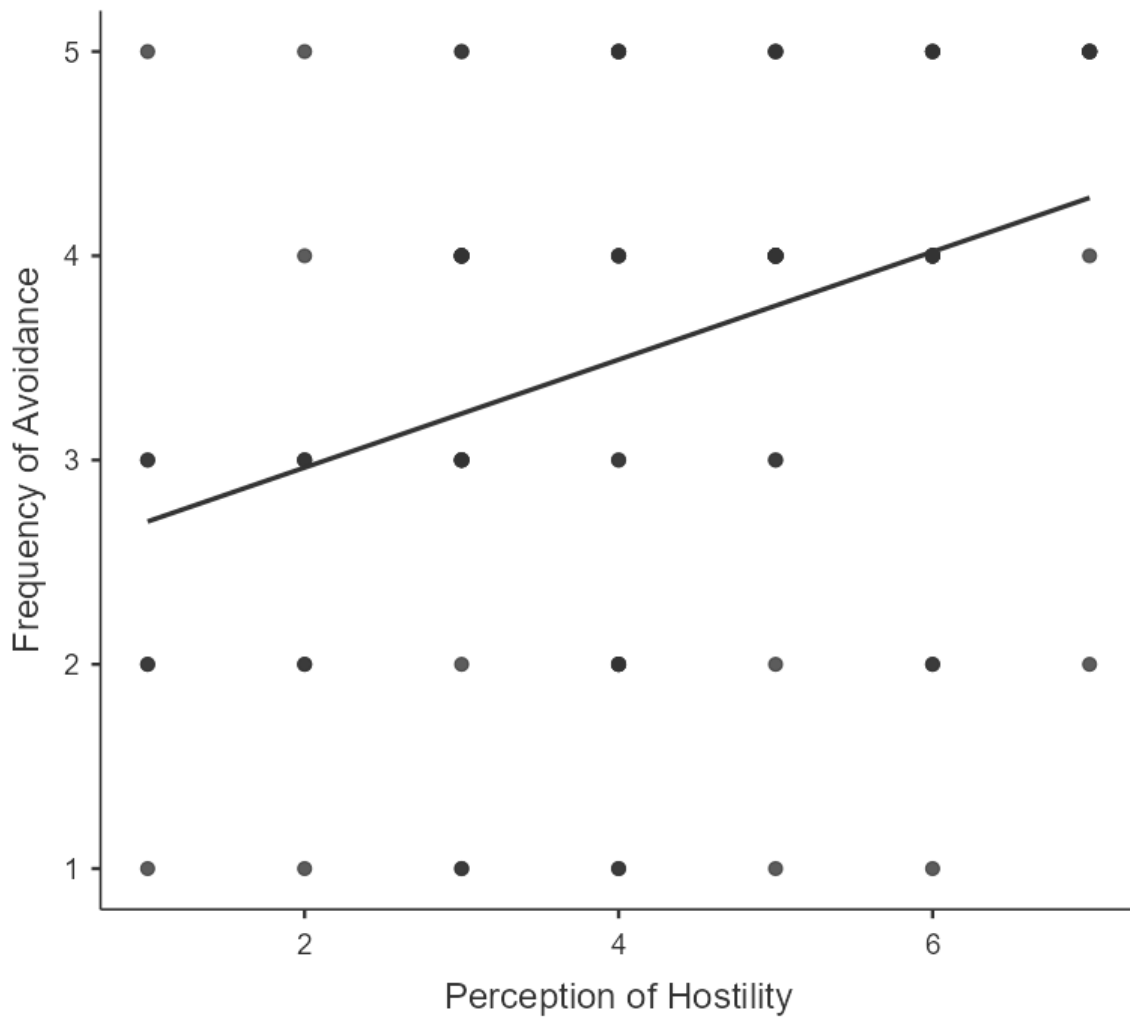*Figure 5: the relationship between the frequency of avoidance of revealing one's gender to other players (gender masking) and the perception of the amount of hostility towards women exists within the video game environment.*
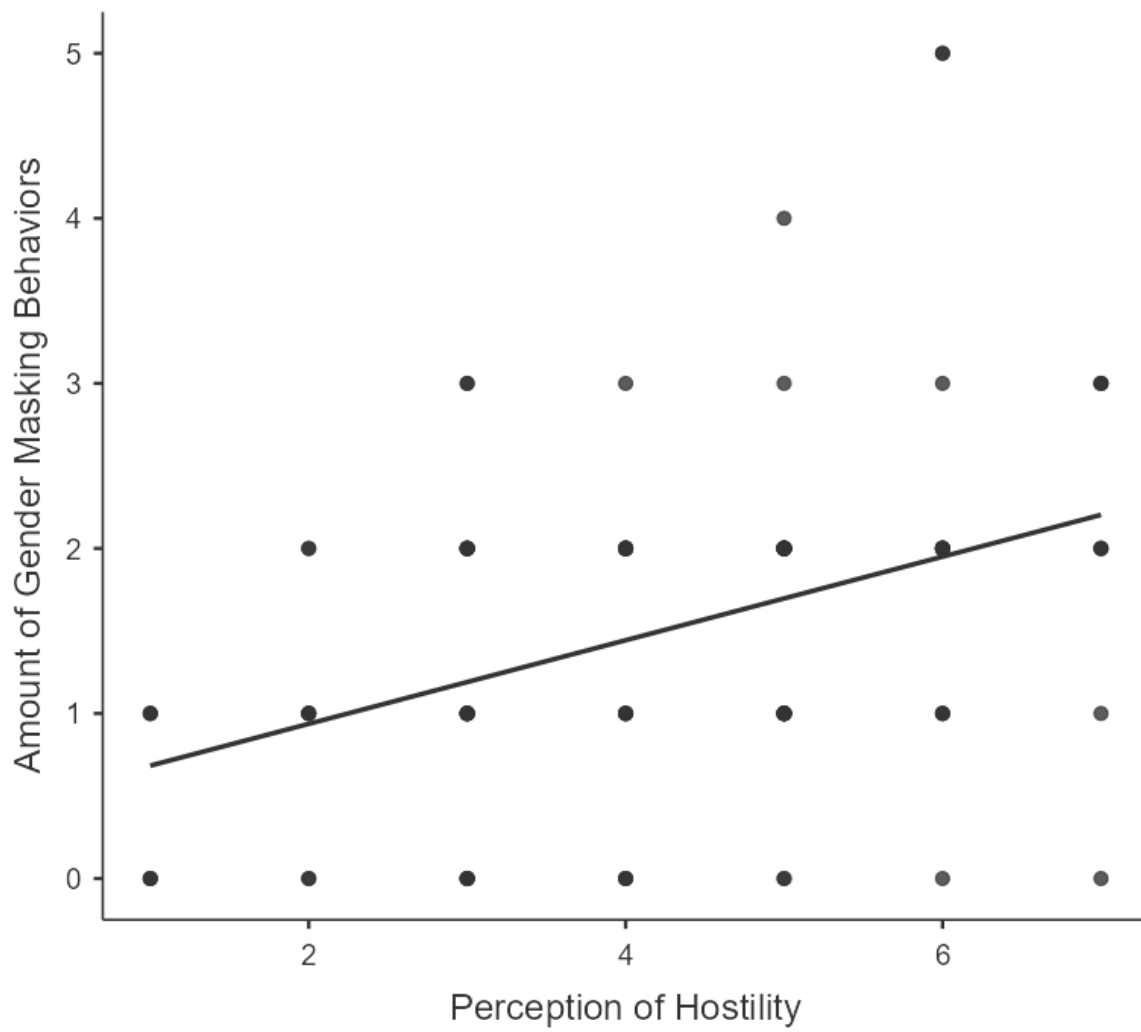
Figure 6: the relationship between the amount of gender masking behaviors one engages in and the perception of the amount of hostility towards women exists within the video game environment.

Discussion

In the present study, I sought to better understand the experiences of women who play online first person shooters. I hypothesized that women will experience more harassment while playing games in which there is a smaller percentage of total female characters. My data show that women do not experience more harassment when playing games in which there is a smaller percentage of total female characters. I also hypothesized that women who experience more harassment while playing online first person shooters will also have worse mental health outcomes. My data uncovered no correlation between harassment and mental health outcomes for all three measures of mental health. However, I did find a relationship between perception of hostility and the PHQ-8, and between perception of hostility and the STAI. My final hypothesis posited that women who experience more harassment while playing online first person shooters would also engage in gender masking behaviors more frequently. My data confirmed this hypothesis, finding that women who experience harassment while playing online first person shooters also are more likely to both mask gender more frequently and utilize a larger amount of strategies for gender masking.

In regards to my first hypothesis, where I found that character gender ratio does not affect harassment, one of the reasons that I was not able to find a positive result may be due to the fact that there is no effect of the characters' gender ratio on harassment specifically within the realm of video games. There is research which indicates that the gender ratio of a work environment has an effect on how women in that environment are treated, such that women are more likely to be treated in a sexist manner if there is a higher ratio of men. However, there is little research on the effect of gender ratio on harassment and sexism within other fields. Although I was hoping that my study would be able to expand the literature within this field of study, I discovered that

there is a reason that I was unable to find more research about this phenomenon—it may not

exist outside of work contexts.

This may be for several reasons, one of which being the difference of environment and its

effect on how people socialize. In a work environment, one engages with coworkers face to face,

and establishes relationships with one another. However, in the context of video games, although

players are able to see other characters, they are not forming relationships; they are able to

understand the distinction between real humans and video game characters. Thus, the players

glean information about the gender ratio of their environment by seeing fictional characters on a

screen instead of interacting with actual people in real life, preventing the effect from replicating.

Another reason I may have not found a positive result is because of the fact that the

female characters in Call of Duty: Modern Warfare are not heavily sexualized. Although female

characters in video games overall are frequently sexualized, female characters in Call of Duty:

Modern Warfare are dressed in the same manner as the male characters. An example of this can

be seen in the image below in figure 7. Mara, a playable character, is dressed as a soldier: in

appropriate, non-exposed clothing and without heavy makeup. Previous studies have found that

players are more likely to outwardly exhibit sexist tendencies when characters within the game

are sexualized (Dill et al 2008), however, characters in Call of Duty: Modern Warfare are

seemingly not sexualized.

Figure 7. Image of the character Mara from Call of Duty (Source: Call of Duty Wiki,

https://callofduty.fandom.com/wiki/Mara)

This is a deeper issue within the present study, as Call of Duty: Modern Warfare was the game with the lower amount of female characters, and my hypothesis stated that games with lower percentages of female characters would see higher amounts of harassment towards female players. I was expecting to see female Call of Duty: Modern Warfare players report more harassment than Overwatch players, given that Overwatch has a nearly equally split gender ratio in terms of characters. However, since the characters in Call of Duty: Modern Warfare are not sexualized, this could have possibly affected the data. Thus, future studies in this area should take this into consideration, and ensure that they operationalize and control for the amount of sexualization of female characters when selecting games to study. Additionally, future research could yield more accurate or significant results if they were to compare more than two games, as the list of current popular first person shooters is not small.

Another reason may be that the games examined here are not character driven. As mentioned earlier, there is a possibility that engagement style may have an effect on the amount of harassment women face, such that the more distanced one feels from the entity they interact

with (characters versus real people), the less likely the gender ratio of the environment has an effect on sexist attitudes. However, in first person shooter games, the main goal of the game is to score more points through kills or by completing the objectives, and the characters only exist as means to do so. Comparatively, in games which are story and character focused, players spend more time getting to know the personality and motivations of each character, and in some games the player character's interaction with non-playable characters has effects on the direction of the plot. In a first person shooter, killing another character is an objective and the game will reward you with points, which dehumanizes both the killer and the killed. However, in a story driven game, killing another character may have drastic consequences on the way other characters treat you, humanizing the character and allowing for the player to form attachments—just like real life!

In regards to my second hypothesis, in which my data revealed no correlation between harassment and any of my measures of mental health, I posit that one of the reasons the data showed a lack of correlation might be, once again, the difference in environment, which affects the way in which one interacts with aggressors. Previous literature on the mental health consequences of sexual harassment has studied environments in real life rather than virtual ones. When someone is faced with an aggressor in real life—especially at work—they have much less of an opportunity compared to virtual environments to escape the situation and thus possibly escape any potential mental health consequences. However, in a virtual environment, players have a plethora of options to stop interacting with the aggressor: leaving the voice communications channel, leaving the text communications channel, muting specific players, reporting aggressors, or even leaving the game entirely. Players have more control over a situation online rather than if they were in real life, meaning they might face high amounts of

harassment while still being able to control the outcome of the situation and therefore possibly escape any mental harm. Additional research also supports the notion that bullying in real life has much more harmful effects than in virtual environments (Hase et al, 2015). The conclusion from this study also suggests that real-life harassment is much more pervasive and inescapable than virtual harassment, similar to the possibility that being in a real or virtual environment could have an impact on the severity of the harassment and its consequences.

It is also possible that due to the harassment female gamers face, they may have developed resilience to online harassment. A different study has found that experiencing bullying could be associated with an increase in resilience to stressors and harassment (Heugten, 2014), which shields one from further mental harm. Given that female gamers experience high amounts of harassment, it is possible that this increased exposure to harassment may have built resilience, which may have been why my data revealed no correlation between harassment and any of the mental health measures. Future studies could take resilience into consideration as a possible mediator in the relationship between harassment and mental health outcomes.

Despite not finding evidence for correlations between mental health and harassment, I did find mild support for a positive correlation between how hostile one perceives their gaming environment to be and their scores on the personal health questionnaire as well as on the state trait anxiety index. This works in tandem with the correlation uncovered when looking at the results of my third hypothesis, which is that female gamers who experience harassment are more likely to hide their gender from other players (more about that below). Given all this evidence, it seems strange that there is not also a correlation between harassment and mental health, however, there could be a few possible explanations for this.

One way of interpreting the data is that because women who report higher levels of harassment are more likely to gender mask, they are exposed to less overall harassment and as such are shielded from poor mental health outcomes. As stated above, the environment of online gaming gives women control over how they interact with other players. It may be difficult to avoid initial harassment from other players when first entering a match, given that first person shooters always match you with other, random players, but it is possible to avoid the mental health consequences of engaging with the aggressor by gender masking.

For my third hypothesis, my data confirmed the correlation between frequency of harassment and frequency of gender masking behaviors, such that female players who experience more harassment are more likely to hide their gender from other players and use a higher number of gender masking techniques. A similar correlation was discovered when comparing gender masking to separate measurements of harassment—unwanted advances, insults, and sabotage. Further analyses uncovered strong positive correlations between female players' perceptions of how hostile the gaming community is towards women and between gender masking behaviors (frequency and number of gender masking techniques).

Because of the unpleasantness of being harassed, female gamers take precautions to ensure that other players do not know their gender, since players frequently harass female players once they learn the latter's gender (Fox and Tang, 2015). The data collected is but one example of a larger pattern of sexism within the video game community, and how it directly affects women's experiences. It is an unfortunate reality that women must be vigilant in many areas of their lives in order to protect themselves from harm, including the times they are simply trying to enjoy their hobbies. Many of the short answers participants reported when asking about

experiences while gaming provide a good look into female gamers' experiences:

"You get unwanted attention and if you fail [at] something, they get angry at you like it's the end of the world (unlike when other male players mess up). I enjoy the game, but it's annoying when they act mean just because you're a girl."

"Usually it was simple insults in the chat, but if I dared to join voice chat and speak then 99% of the time people would make fun of me regarding how I play or what I contribute to the team. Sometimes I lose all hope to play games like these."

"I never use my mic anymore but if I do there is always someone who will have something hateful to say about me being a woman."

These accounts come from only a few women, but they are representative of many female gamers' experiences. Overall, 63.3% of women experience harassment from other players (Matthew, 2012)—not a small number. Unfortunately, this problem runs very deep within the video game community.

However, the community is not as sexist as it always has been. #GamerGate revealed the ugly side of gaming, yet it also showed hope for improvement as women finally spoke up about the discrimination they've experienced both as players and as developers. It also served as inspiration for the present study, in which I was able to show that women experiencing harassment online are forced to conceal themselves in order to enjoy the game. It is my hope and the hope of many female gamers that the future of gaming will be more accessible and less sexist towards women.

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Independent Samples T-Test (Hypothesis 1)

Independent Samples T-Test

		Statistic	df	p		Effect Size
Harassment Composite Score	Student's t	0.1057	97.0	0.916	Cohen's d	0.0229
Insults	Student's t	0.1374	97.0	0.891	Cohen's d	0.0298
Advances	Student's t	-0.3701	97.0	0.712	Cohen's d	-0.0802
Sabotage	Student's t	0.5708	97.0	0.569	Cohen's d	0.1237
Perception of Hostility	Student's t	-0.0687	97.0	0.945	Cohen's d	-0.0149

Table 1. Results from the independent samples t-test concerning the relationship between different aspects of harassment and games (Overwatch versus Call of Duty: Modern Warfare)

Group Descriptives

	Group	N	Mean	Median	SD	SE
Harassment Composite Score	Overwatch	31	2.55	2.33	1.03	0.185
	COD	68	2.52	2.33	1.05	0.127
Insults	Overwatch	31	2.90	3.00	1.22	0.219
	COD	68	2.87	3.00	1.18	0.143
Advances	Overwatch	31	2.48	2.00	1.21	0.217
	COD	68	2.59	2.00	1.34	0.163
Sabotage	Overwatch	31	2.26	2.00	1.18	0.212
	COD	68	2.12	2.00	1.11	0.135
Perception of Hostility	Overwatch	31	4.23	4.00	1.63	0.292
	COD	68	4.25	4.50	1.62	0.197

Table 2. Group descriptives for each measure of harassment separated by game (Overwatch versus Call of Duty: Modern Warfare)

Correlation Matrix - Harassment and Mental Health (Hypothesis 2)

Correlation Matrix

		Harassment Composite Score	Insults	Advances	Sabotage	Perception of Hostility	PSS_total	PHQ_total	STAI_TOTAL
Harassment Composite Score	Pearson's r	—							
	p-value	—							
Insults	Pearson's r	0.875 ***	—						
	p-value	< .001	—						
Advances	Pearson's r	0.879 ***	0.674 ***	—					
	p-value	< .001	< .001	—					
Sabotage	Pearson's r	0.822 ***	0.584 ***	0.565 ***	—				
	p-value	< .001	< .001	< .001	—				
Perception of Hostility	Pearson's r	0.545 ***	0.498 ***	0.481 ***	0.425 ***	—			
	p-value	< .001	< .001	< .001	< .001	—			
PSS_total	Pearson's r	-0.010	0.034	-0.060	0.005	0.094	—		
	p-value	0.920	0.739	0.554	0.960	0.352	—		
PHQ_total	Pearson's r	-0.082	-0.055	-0.130	-0.018	0.177	0.743 ***	—	
	p-value	0.421	0.590	0.199	0.860	0.080	< .001	—	
STAI_TOTAL	Pearson's r	0.004	0.025	0.018	-0.035	0.186	0.758 ***	0.748 ***	—
	p-value	0.968	0.807	0.861	0.728	0.065	< .001	< .001	—

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Table 3. Correlational matrix exploring relationships between various aspects of harassment and different measures of mental health (Perceived Stress Scale, Personal Health Questionnaire, State Trait Anxiety Index).

Correlation Matrix - Harrassment and masking behaviors (Hypothesis 3)

Correlation Matrix

		Frequency of Avoidance	Amount of Gender Masking Behaviors	Insults	Advances	Sabotage	Perception of Hostility	Harassment Composite Score
Frequency of Avoidance	Pearson's r	—						
	p-value	—						
Amount of Gender Masking Behaviors	Pearson's r	0.381 ***	—					
	p-value	< .001	—					
Insults	Pearson's r	0.187	0.258 **	—				
	p-value	0.064	0.010	—				
Advances	Pearson's r	0.280 **	0.207 *	0.674 ***	—			
	p-value	0.005	0.039	< .001	—			
Sabotage	Pearson's r	0.148	0.261 **	0.584 ***	0.565 ***	—		
	p-value	0.143	0.009	< .001	< .001	—		
Perception of Hostility	Pearson's r	0.349 ***	0.396 ***	0.498 ***	0.481 ***	0.425 ***	—	
	p-value	< .001	< .001	< .001	< .001	< .001	—	
Harassment Composite Score	Pearson's r	0.242 *	0.280 **	0.875 ***	0.879 ***	0.822 ***	0.545 ***	—
	p-value	0.016	0.005	< .001	< .001	< .001	< .001	—

Note. * p < .05, ** p < .01, *** p < .001

Table 4. Correlational matrix exploring the relationship between various measures of harassment and various measures of gender masking.
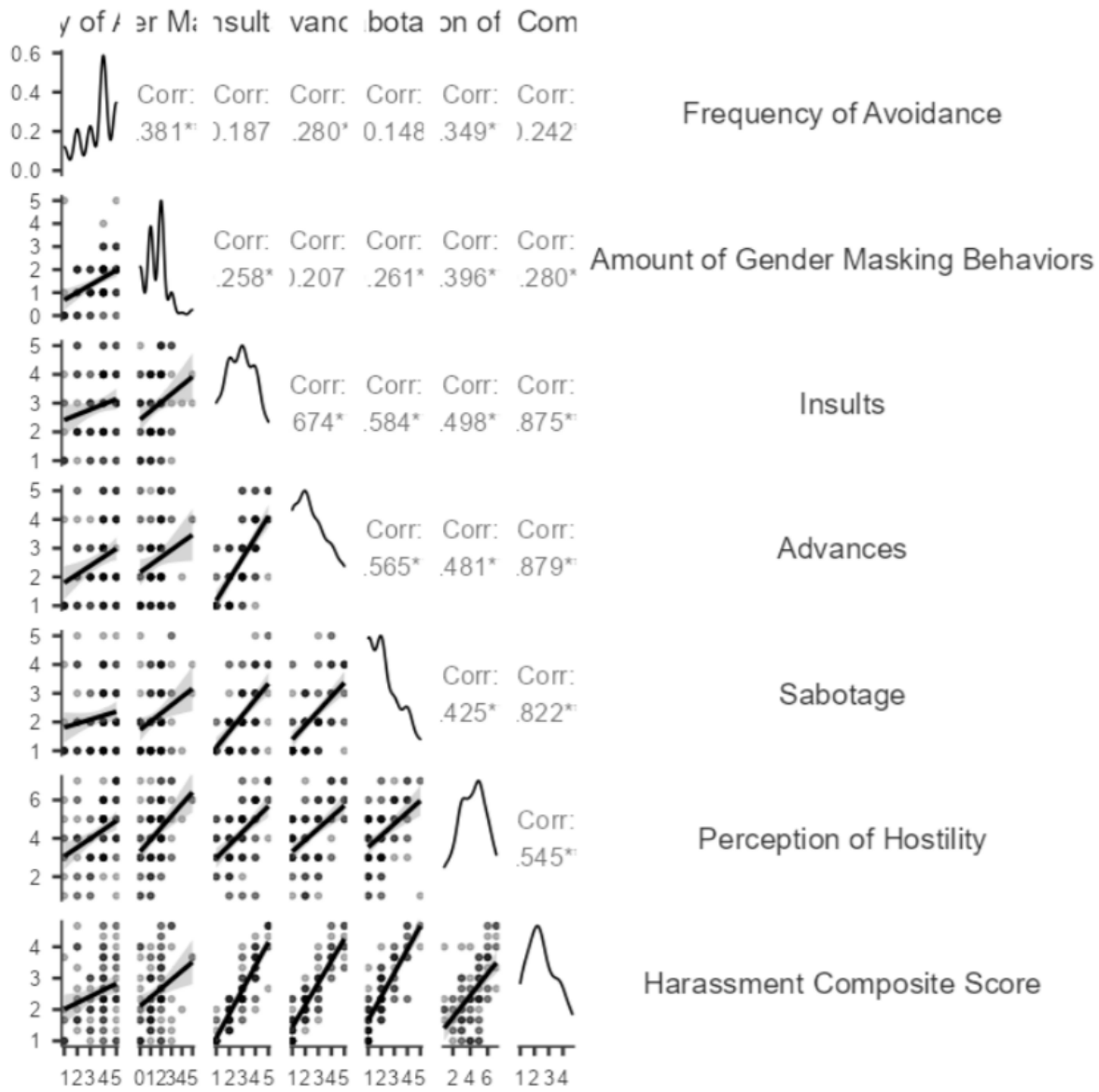
Figure 8. Correlational matrix highlighting the strength of relationships between various measures of harassment and various measures of gender masking through scatterplot graphs.

Appendix A - IRB Approval Letter and CITI Certificate

Bard College   Institutional Review Board

Date: June 24, 2021
To: Emma Kisselev
Cc: Richard Lopez, Deborah Treadway, Brandt Burgess
From: Tom Hutcheon, IRB Chair
Re: Characterizing Experience and Regulation of Sexual Harassment Experiences Among Female Gamers in First-Person Shooters

DECISION: APPROVED

Dear Emma,

The Bard Institutional Review Board has reviewed your revisions and approved your proposal entitled "Characterizing Experience and Regulation of Sexual Harassment Experiences Among Female Gamers in First-Person Shooters." Your proposal is approved through June 24, 2022 and your case number is 2021JUNE24-KIS.

Please notify the IRB if your methodology changes or unexpected events arise.

We wish you the best of luck with your research!

Tom Hutcheon
IRB Chair
thutcheo@bard.edu

FHI 360

certifies that

Emma Kisselev

has completed the

RESEARCH ETHICS TRAINING CURRICULUM

March 3, 2019

Appendix B - Preregistration

1. Have any data been collected for this study already?

Yes, all of the data have been collected for this study.

2. What's the main question being asked or hypothesis being tested in this study?

H1: We will determine whether first person shooter games in which there is a higher amount of female characters is related to higher amount of sexism in the community in a sample of
N = 105 women who play video games.

H2: We will determine whether the amount of gender discimination women face while playing a first person shooter is related to mental health outcomes in a sample of N = 105 women who play video games.

H3: We will determine whether Women who more readily experience gendered discrimination while playing a first person shooter game is related to gender masking behaviors in a sample of N = 105 women who play video games.

This is a correlational study using data obtained from collecting survey data on prolific. The analyses will be performed primarily by Emma Kisselev, primary researcher, **who has not worked with the data or seen it prior to analyses**.*

3. Describe the key dependent variable(s) specifying how they will be measured.

We will measure our first variable, harassment, by asking a series of multiple choice questions about whether or not the participant agrees with statements regarding sexist behavior from teammates. There is a short-answer question in which participants can detail their experiences.

We will measure our second variable, mental health, by asking participants to complete the State Trait Anxiety Index (STAI) to measure anxiety, the personal health questionnaire depression scale (PHQ-8) to measure depression, and the perceived stress scale (PSS) to measure daily stress.

We will measure our final variable, gender masking, by asking questions relating to gender masking behavior, as well as a multiple choice question asking to detail these behaviors.

4. How many and which conditions will participants be assigned to?

N/A

5. Specify exactly which analyses you will conduct to examine the main question/hypothesis.

To address Hypothesis 1, we will run a logistic regression with harassment included as our outcome/dependent variable, and game included as our predictor/independent variable. A p-value of less than .05 will indicate a significant effect of the predictor variable(s) on our outcome/dependent variable, harassment.

To address Hypothesis 2, we will run a linear regression with mental health outcomes included as our outcome/dependent variable, and harassment included as our predictor/independent variable. A p-value of less than .05 will indicate a significant effect of the predictor variable(s) on our outcome/dependent variable, harassment.

To address Hypothesis 3, we will run a linear regression with gender masking behaviors included as our outcome/dependent variable, and harassment included as our predictor/independent variable. A p-value of less than .05 will indicate a significant effect of the predictor variable(s) on our outcome/dependent variable, harassment.

6. Any secondary analyses?

We will also be exploring the relationships between all the measured concepts, namely: harassment, mental health, gender masking, gender perception, game. All of these will be linear (or logistical for game) regressions.

7. How many observations will be collected or what will determine the sample size? No need to justify decision, but be precise about exactly how the number will be determined.

Individuals who are male and/or not players of Overwatch/COD will be excluded from the present analyses. N = 105.

8. Anything else you would like to pre-register? (e.g., data exclusions, variables collected for exploratory purposes, unusual analyses planned?)

N/A

Appendix C - Consent Form

Gaming Habits & Health Survey

INFORMED CONSENT AGREEMENT

Background
The purpose of this research is to investigate and document women's experiences playing online first person shooter games.

What you will do in the study
You will complete a survey regarding your experiences playing games as well as a few surveys regarding your mental health.

Risks and Benefits
It is possible that some participants may experience slight discomfort when recounting negative experiences. Such discomfort is unlikely to be any greater than what participants naturally experience. If you feel any discomfort when answering any questions, you may skip those questions or leave the study voluntarily.
This research will benefit female gamers because it will broaden the literature on women's experiences playing online games.

If you are interested in receiving a photocopy of responses you produced as part of the study for personal use and reference, you may request one by emailing Richard Lopez (rlopez@bard.edu) when data collection and analysis for the study have concluded.

Compensation
In exchange for participating in the experiment, participants will be compensated at a rate of at least $9.50 USD per hour or more, as set by Prolific's policy for compensating human participants.

Your rights as a participant
Your participation in this experiment is completely voluntary, and you may withdraw from the experiment at any time without penalty. Also, if there are questions on any survey that you would rather not answer for any reason, you can choose not to respond to those questions. You will still receive prorated cash payment or course credit for the amount of time you were enrolled in the study. You may withdraw by notifying the experimenter that you no longer wish to participate, and no questions will be asked. At the conclusion of the study, a debriefing session will take place in which the experimenter will tell you more about the study's aims and hypotheses in greater detail.

Contact
If you have questions about this research, please contact Richard Lopez, Assistant Professor of Psychology, Bard College, at rlopez@bard.edu.

Confidentiality
You will provide your name on this consent form, but otherwise you will be assigned a random alphanumeric code so your identity remains confidential. Only authorized research personnel will be able to link your name to your data. However, in the interest of open and reproducible science, de-identified data from this study may also be posted on the Open Science Framework. All data will be stored securely on password-protected computers with encrypted hard drives.

If you have questions about this study, please contact Richard Lopez, Department of Psychology, Bard College, at rlopez@bard.edu. If you have questions about your rights as a research participant, please contact the Bard College Institutional Review Board: irb@bard.edu.

Agreement
The nature and purpose of this research have been sufficiently explained and I agree to participate in this study. I understand that I am free to withdraw at any time without incurring any penalty. I certify that I am at least 18 years of age.

Do you consent to participate in this study?

Yes

No

Appendix D - Survey Materials

A number of statements which people have used to describe themselves are given below.

Read each statement and then mark the circle that indicates **how you generally feel**.

There is no right or wrong answer. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

	Almost never	Sometimes	Often	Almost always
I feel pleasant.	O	O	O	O
I feel nervous and restless.	O	O	O	O
I feel satisfied with myself.	O	O	O	O
I wish I could be as happy as others seem to be.	O	O	O	O
I feel like a failure.	O	O	O	O
I feel rested.	O	O	O	O
I am calm, cool, and collected.	O	O	O	O
I feel that difficulties are piling up so that I cannot overcome them.	O	O	O	O
I worry too much over something that really doesn't matter.	O	O	O	O
I am happy.	O	O	O	O
I have disturbing thoughts.	O	O	O	O
I lack self confidence.	O	O	O	O
I feel secure.	O	O	O	O
I make decisions easily.	O	O	O	O
I feel inadequate.	O	O	O	O
I am content.	O	O	O	O
Some unimportant thoughts runs through my mind and bothers me	O	O	O	O
I take disappointments so keenly that I can't put them out of my mind.	O	O	O	O
I am a steady person.	O	O	O	O
I get in a state of tension or turmoil as I think over my recent concerns and interests.	O	O	O	O

Personal Health Questionnaire

Over the **last 2 weeks**, how often have you been bothered by any of the following problems? (Mark **one circle** for each line)

	Not at all	Several days	More than half the days	Nearly everyday
Little interest or pleasure in doing things	O	O	O	O
Feeling down, depressed, or hopeless	O	O	O	O
Trouble falling or staying asleep, or sleeping too much	O	O	O	O
Feeling tired or having little energy	O	O	O	O
Poor appetite or overeating	O	O	O	O
Feeling bad about yourself, or that you are a failure, or have let yourself or your family down	O	O	O	O
Trouble concentrating on things, such as reading the newspaper or watching television	O	O	O	O
Moving or speaking so slowly that other people could have noticed. Or the opposite- being so fidgety or restless that you have been moving around a lot more than usual	O	O	O	O

Perceived Stress Scale

In the last month, how often have you found that you could not cope with all the things that you had to do?

Never
Almost Never
Sometimes
Fairly Often
Very Often

In the last month, how often have you been able to control irritations in your life?

Never
Almost Never
Sometimes
Fairly Often
Very Often

In the last month, how often have you felt that you were on top of things?

Never
Almost Never
Sometimes
Fairly Often
Very Often

In the last month, how often have you been angered because of things that were outside of your control?

Never
Almost Never
Sometimes
Fairly Often
Very Often

In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

Never
Almost Never
Sometimes
Fairly Often
Very Often

In the last month, how often have you been upset because of something that happened unexpectedly?

Never
Almost Never
Sometimes
Fairly Often
Very Often

In the last month, how often have you felt that you were unable to control the important things in your life?

Never
Almost Never
Sometimes
Fairly Often
Very Often

In the last month, how often have you felt nervous and "stressed"?

Never
Almost Never
Sometimes
Fairly Often
Very Often

In the last month, how often have you felt confident about your ability to handle your personal problems?

Never
Almost Never
Sometimes
Fairly Often
Very Often

In the last month, how often have you felt that things were going your way?

Never
Almost Never
Sometimes
Fairly Often
Very Often

Gaming Questions

Approximately how often do you experience gender based insults/jokes when playing ?

| Never |
| Rarely |
| Sometimes |
| Often |
| Always |

Approximately how often do you experience unwanted sexual/romantic advances when playing ?

| Never |
| Rarely |
| Sometimes |
| Often |
| Always |

Approximately how often do your teammates deliberately sabotage your/your team's gameplay because of your gender?

| Never |
| Rarely |
| Sometimes |
| Often |
| Always |

Do you think is a hostile environment for female-presenting players?

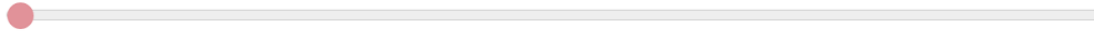| Complete Disagree |
| Disagree |
| Somewhat disagree |
| Neutral |
| Somewhat Agree |
| Agree |
| Fully Agree |

In a few sentences, how has your experience playing been impacted by your female gender?

What percentage of individuals who play do you think are women?

0   10   20   30   40   50   60   70   80   90   100

Percentage

Regardless of the proportions entered above, please indicate your level of agreement with the following two statements:

's community is a male-dominated space in which a masculine standard is reinforced by players (e.g., there is an assumption of maleness among players, discussions involving women are often misogynistic, aggressive behavior is praised by other players).

| Complete Disagreely | Disagree | Somewhat disagree | Neutral | Somewhat Agree | Agree | Completely Agree |

's players makes it difficult to exist in the community as a woman (e.g., players treat you differently than they would male players, your competence is challenged by players because you are a woman, etc).

| Completely Disagree | Disagree | Somewhat disagree | Neutral | Somewhat Agree | Agree | Completely Agree |

While gaming online, how often do you avoid using communication features (voice chat, text chat, etc.) to avoid harassment from other players?

Never	Rarely	Sometimes	Often	Always

Please indicate which of the following behaviors you do to avoid harassment from other players while playing (check as many that apply):

I use a masculine/gender neutral screen name

I avoid using voice chat

I avoid using text chat

I present as male when communicating with other players

I only play male characters

I never hide my gender identity while playing online

Other: