COLLABORATORY AGAINST HATE | RESEARCH AND ACTION CENTER

Misogyny Surfaces as Top Issue in Survey of In-game Experiences

In this white paper, we present results from a preliminary survey of gamers about in-game hate, harassment, and discrimination. Survey participants (n = 152) were recruited at the Tekko Convention, a regional anime convention in Pittsburgh, Pennsylvania, USA, in June 2023. Misogyny, anti-LGBTQ+ hate, and racial harassment were all reported as frequently experienced in online gaming, most often through verbal slurs in game voice or text chat.

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The Collaboratory Against Hate: Research and Action Center at Carnegie Mellon University and the University of Pittsburgh aspires to develop and support innovative multidisciplinary, interdisciplinary, and cross-university research aimed at understanding how extremist hate is generated, how it circulates in online and real-life spaces, and how it polarizes society and provokes harmful and illegal acts, especially toward communities of color and other minoritized groups. We seek to develop effective interventions to inhibit every stage in the creation and growth of extremist hate groups and to minimize their destructive consequences.

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1. Introduction

With advancements in network connectivity and the ubiquity of the Internet, online gaming has continued to rise in popularity [17]. This rise in recreational online gaming has also coincided with a rise in esports ("electronic sports"), a form of competitive gaming involving teams playing for prizes in organized tournaments. Both online gaming and esports are global phenomena that offer individuals connectivity, camaraderie and competition within a diverse community.

However, online gaming is also rife with hate and harassment. According to a 2023 report from the Anti-Defamation League, more than 76% of gamers aged 18-45 and nearly the same percentage of teens and pre-teens aged 10-17 have experienced harassment in online gaming spaces [1]. The presence of hate in gaming is well-established [2, 4, 11], yet further research is required to understand the types of hate proliferated as well as the game designs, contexts and technologies which enable them.

This white paper discusses results from an exploratory study conducted by the Collaboratory Against Hate (CAH). Researchers surveyed 152 gamers at an anime convention in Pittsburgh, Pennsylvania, USA, to discover participants' experiences with hate and harassment in online gaming. The survey focused on types of experiences, how frequently they occur, in what kinds of gaming environments they occur, and how they vary according to the self-presented identities of participants. Our research highlighted misogynistic attitudes as a top issue, with derogatory slurs the most harmful discriminatory action. This was often enabled by voice chat, a medium through which many respondents reported experiencing profiling and resulting harassment. By analyzing the ways in which gamers experience various types of hate, we hope to inform online gaming and esports stakeholders so that they can take action to combat hate and harassment.

2. Related work

Researchers from a variety of disciplines have studied issues of hate and harassment in online gaming. These studies have drawn insights from a variety of data sources including surveys and interviews, as well as chat logs, video recordings of games, and other observational data (see Nexø [18] for a more thorough review).

2.1 Surveys and interview studies on hate and harassment in online gaming

Prior academic work that surveyed gamers about their experiences with hate and harassment have often focused on sexism and gender issues. This includes two prior studies from Fox and Tang in 2014 and 2017. Their first study explored the predictive relationship between social dominance orientation, i.e. endorsement of inequality among social groups to uphold the superiority of particular groups, and higher scores on the Video Game Sexism Scale, a tool they developed to measure sexist beliefs about women and gaming. Through the survey data of 301 gamers, Fox and Tang concluded that predictors of video game sexism included both social dominance orientation and conformity to some masculine norms, including a desire for power over women and the need for heterosexual self-presentation [7].

Fox and Tang's 2017 study surveyed women gamers to discover their experiences with general and sexual harassment in gaming. They developed a scale to measure harassment in video games that considered verbal and gameplay harassment (such as interfering with play). The scale includes both general and sexual harassment behaviors, with general harassment including actions such as swearing or insulting a player's skill, and sexual harassment including sexist comments, being asked for sexual favors, and rape jokes and threats. This survey found sexual harassment in online gaming led to withdrawal of women from gaming altogether. Impact on those who experienced sexual harassment varied according to organizational responsiveness, highlighting the importance of the game industry in protecting gamer experiences online [8].

Both of Fox and Tang's studies had very high participation from gamers identifying as white (Caucasian): 88% of respondents from the 2014 study [7] and 79% of respondents from the 2017 study [8]. In our preliminary study, we also struggle to recruit a racially diverse participant base.

Meyer conducted a large-scale survey of 1,016 online gamers about experiences of toxicity in gaming [16]. Participants were recruited by advertising on subreddits across a wide variety of popular online games. Though survey participants came from over 60 countries, 87% identified as male and 80% identified as white, which may skew the survey toward the perspectives of socially privileged gamers. Regardless, they found that 92% of survey participants reported being subjected to toxic behavior in gaming within the last 12 months. This included 39% of participants experiencing verbal abuse based on race, 32% based on sexual orientation, 30% based on disability, 23% based on age, and 22% based on gender. They found that gamers who identified with marginalized identity groups reported experiencing higher rates of toxicity, which we also find in our preliminary study. 74% of respondents also reported being dissatisfied with how game developers are handling this issue.

Other studies have conducted interviews to investigate gamer experiences with hate and harassment. These studies found similar issues of hostile gaming environments, especially toward women. Madden et al. interviewed professional esports players and event organizers about gender bias in esports, finding that many professionals regarded the space as male-dominated, with female gamers experiencing harassment and coping using voice changers or behavior that doesn't reveal that they're women. Many participants were unaware the extent to which player experiences varied based on gender identity [14]. Similarly, Darvin et al. interviewed 10 women esports industry employees, finding that prominent obstacles to more female representation in competitive gaming included hostile environments and toxic "geek" masculinity [5]. Ortiz interviewed men of color about their experiences with racism on Xbox Live, finding that such men often desensitized themselves to cope. This coping fit with an understanding of masculinity as avoiding emotional reactions and remaining silent amidst "everyday racism" [19]. Irwin et al. find a generally positive ethos around "trash-talking" as a distinct part of esports from structured observations of professional tournaments and interviews with 15 spectators [10].

2.2 Observational studies of hate and harassment in logs of online gaming

Other works have analyzed observational data, such as logs of in-game chat, user reports, and game activity logs to study toxicity in online gaming.

Research studying in-game chat has analyzed patterns of appearance and the nature of verbal toxicity in chat. Weld et al., for example, analyzed text chat logs from a publicly available dataset from Dota 2, a multiplayer online game. They found most toxicity present before games begin and especially after they end during "post-victory celebration and recrimination" [21]. This matches the analysis of League of Legends text chat by Kwak and Blackburn, who found that players often exhibit normal chat behaviors in the beginning of games but toxic terms appear more frequently at the end, sometimes in blaming other players after losing [13]. Ekiciler et al. analyzed over a million comments from the same Dota 2 text chat logs, finding clusters of sexist keywords that indicate objectification, shaming, and threats of violence [6]. Some of these papers also build and evaluate classifiers for toxicity in gaming chat, a practical application of the research [3, 6, 20, 21].

Kowert and Woodwell analyzed proprietary voice chat logs from three indie game studios using the commercial Modulate ToxMod machine learning toxicity detection system. They found that a quarter of players in their dataset used offensive language, with players who were perceived by the system as adults more likely than underage players to have at least one offense. They also found that racial/cultural hate speech is common (53% of offenses), while sexual vulgarity (33%) and gender/sexual hate speech (12%) are also prevalent [12].

In addition to chat logs, some research has examined the relationship between non-verbal gameplay behaviors and toxicity. Studying user reports from the famously toxic and popular game League of Legends, Blackburn and Kwak built classifiers to predict crowdsourced moderation decisions [3]. They found that combining features from gameplay (game performance, etc), user reports (numbers of reports from different players), and the text chat (sentiment-based features) yields the best performance in predicting moderation decisions. Märtens et al. looked at the relationship between game performance and toxic language in chat logs in Dota and found that kill events and poor team performance are associated with toxic language in chat [15]. Looking at non-verbal in-game behaviors in World of Tanks, Shen et al. also find that teams that are losing or have a large disparity in skill level among players are more likely to be associated with toxicity reports [20].

3. Methods

To get a better understanding of the main challenges faced by players experiencing hate, we surveyed interested participants at the 2023 Tekko convention. The Tekko convention* is an anime convention held in Pittsburgh, Pennsylvania, USA, drawing participants from across the region. Though the focus is anime, there is a large gaming component. Collaboratory Against Hate researchers had a table in the gaming vendor section of the convention with Carnegie Mellon University banners. In order to attract participants beyond just those who specifically care about issues of hate and harassment in gaming, the survey's topic was advertised as simply "experiences in gaming." Interested participants were provided with a QR code and link to an online Qualtrics survey which they could complete on their phone in about 5 minutes. Participants who fully completed the survey received a candy bar as a reward for taking the survey. This study was approved by the Institutional Review Board at Carnegie Mellon University.

Survey questions were designed to capture common experiences that people have within online gaming, specifically the frequency and severity of different types of harassment. The survey included both multiple-choice and open-ended questions. The full survey is available in the Appendix.

We conducted a thematic analysis of responses to open-ended questions to identify common themes across responses. We annotated which responses contained mentions of specific actions that participants experienced or saw ("name-calling happens a lot") as opposed

* https://tekko.us/

to more general statements (such as "hate is a problem"). We also annotated the identity, if any, to which each specific action was directed. Three CAH researchers jointly coded a small set of responses for specific experiences on a video call to align definitions, and then one CAH researcher coded all the responses for the mention of specific experiences. Three CAH researchers then used affinity diagramming [9] to group types of related actions together, such as those that target a player's gameplay (including kicking from the game, raids, trying to kill a player's character in the game).

4. Results

4.1 Information about survey respondents

Tables 1 and 2 show the self-reported race/ethnicities and genders of the 152 survey respondents. Though participants reported a diversity of genders, the vast majority (72.4%) of respondents identified as white. Though this percentage is reflective of the Pittsburgh metropolitan area, which is 86% white, it should not be taken as representative of a general gaming population in the United States. Ages of participants ranged from 18-48, with the average age being 27 (see Table 3). Most participants reported playing video games either less than 6 hours per week or 6-10 hours per week (Table 4). As seen in Table 5, the most popular games of participants were Super Smash Brothers, Pokémon, and Minecraft.

Table 1: Reported race/ethnicity of survey participants

Race/ethnicity	No. of respondents	% of respondents
White	110	72.4
Asian	10	6.6
Multiple	9	5.9
Black	8	5.3
Latinx/Hispanic	6	3.9
Native American	1	0.6
Other/prefer not to answer	8	5.3
TOTAL	152	100.0

Table 2: Reported gender of survey participants

Gender	No. of respondents	% of respondents
Male	68	44.7
Female	63	41.4
Non-binary	17	11.2
Prefer not to say	4	2.6
TOTAL	152	100.0

Table 3: Reported age of survey participants

Age	No. of respondents	% of respondents
18-22	44	28.9
23-27	40	26.3
28-32	48	31.6
33 and over	20	13.2
TOTAL	152	100.0

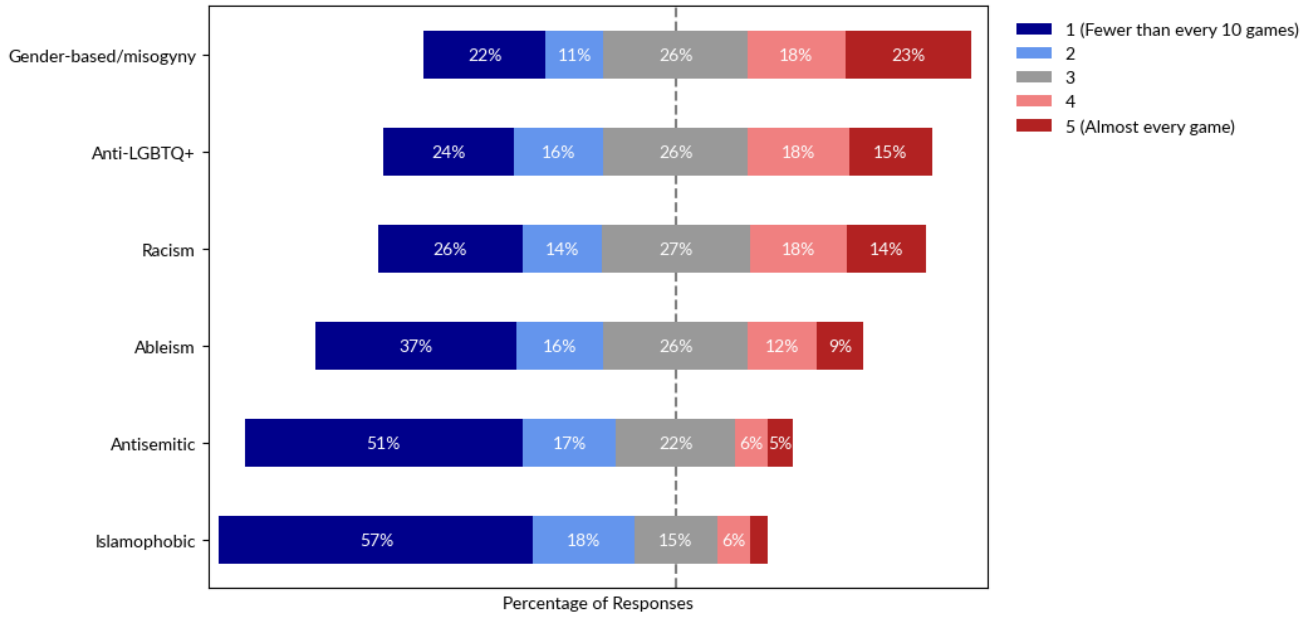
Table 4: Reported number of hours per week survey participants spend gaming

No. of hours/week	No. of respondents	% of respondents
< 6	45	29.6
6-10	37	24.3
11-15	21	13.8
16-20	18	11.8
21-25	12	7.9
26-30	8	5.3
>30	11	7.2
TOTAL	152	100.0

Table 5: Number of survey participants who play various games. Participants could select multiple games, which leads to a total of 242 responses from 152 respondents.

Game	No. of responses	% of responses
Super Smash Bros.	69	29.6
Pokémon	68	24.3
Minecraft	56	13.8
League of Legends	18	11.8
Fortnite	12	7.9
Call of Duty	8	5.3
Other games	11	7.2
TOTAL RESPONSES	242	100.0

Figure 1: Distribution of Likert scale responses to the question, "How often do you see the following in multiplayer matches?" for each provided option (y axis). *N* = 152.



4.2 Frequency of discrimination against different identity groups

Figure 1 shows distributions of responses for which demographics (gender, race, sexual orientation, etc.) survey participants perceived to be targeted in games. Specifically, participants were asked how often they saw a predefined set of discrimination types against different identity groups and were asked to respond on a 1-5 Likert scale, with 1 being "fewer than every 10 games" and 5 being "almost every game." Misogyny was perceived as the most common form of discrimination experienced while playing games, with 23% of participants reporting that they observe it almost every game. Anti-LGBTQ+ and racial harassment were other common forms of discrimination, with 15% and 14% of participants reporting seeing these forms in almost every game.

Gamers with marginalized identities rated discrimination as more common than gamers from privileged groups. Female gamers and gamers identifying outside the gender binary (selecting "non-binary / third gender" or self-describing a non-binary gender) rated seeing gender-based discrimination or misogyny at much higher rates than gamers who identified as male (Figure 2).

Figure 2: Distribution of responses to the question, "How often do you see gender-based discrimination or misogyny appear in multiplayer matches?" separated by the self-reported identity of respondents. Note the differing number of respondents in each identity group.

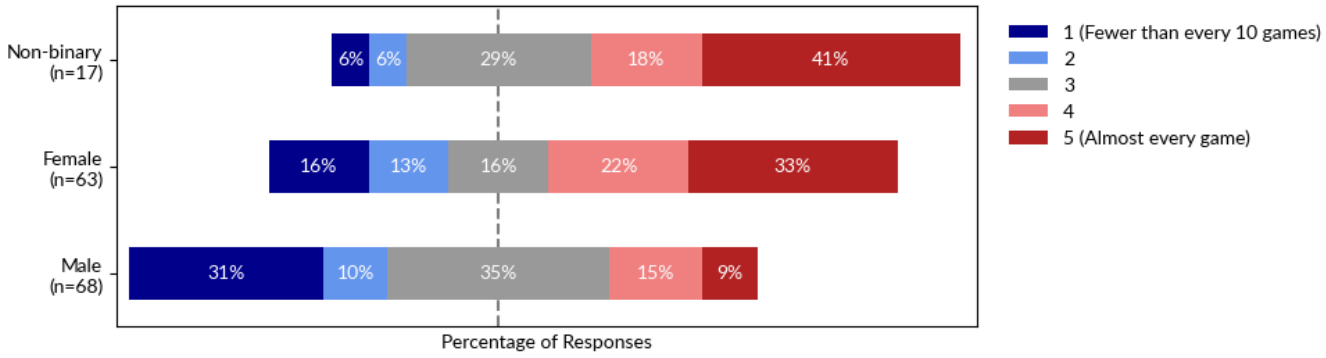


Figure 3: Distribution of responses to the question, "How often do you see racial harassment appear in multiplayer matches?" separated by the self-reported identity of respondents. Note the differing number of respondents in each identity group.

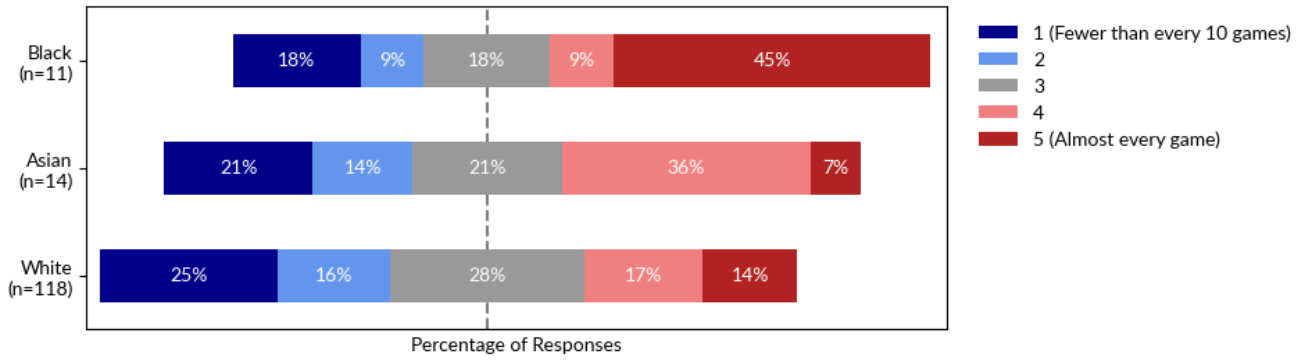


Table 6: Experiences mentioned in free-form text responses. "Voice shaming" refers to hate expressed in response to someone's voice.

Experience	No. of responses	% of responses
saying slurs	43	38.4
other (discriminatory)	19	17.0
bullying (non-discriminatory)	17	15.2
trolling	7	6.2
voice shaming	7	6.2
harassment	7	6.2
interfering with gameplay	5	4.5
mean jokes, bad faith arguments	4	3.6
discriminatory exclusion	3	2.7
TOTAL EXPERIENCES MENTIONED	112	100.0

Table 7: Distribution of responses to the question, "Which developer do you think does the most to promote a positive competitive playing environment?".

Game developer	No. of respondents	% of respondents
Nintendo	54	35.5
I'm not sure	30	19.7
Riot Games	20	13.2
Other	11	7.2
Blizzard	10	6.6
Valve	8	5.3
Epic Games	8	5.3
EA	6	3.9
Activision	5	3.3
TOTAL	152	100.0

Though the number of gamers of color surveyed was small (see Table 1), these gamers reported racial harassment as more common than white gamers. See Figure 3 for distributions of responses across racial groups. Note that participants were allowed to select identifying with multiple races. For Figure 3, participants' ratings were included in the identity group if they selected that race with or without any other combination of races.

4.3 Thematic analysis of free-form responses

Our thematic analysis of free-form responses aimed to uncover specific experiences of hate and harassment in gaming, along with which identities these were directed at. Though participants mentioned these experiences across multiple free-form responses, most were drawn from responses to the question, "What are some examples of ways you see discrimination or hate appearing in online gaming communities?" The prevalence of different themes we identified through our process of open coding and affinity diagramming can be viewed in Table 6.

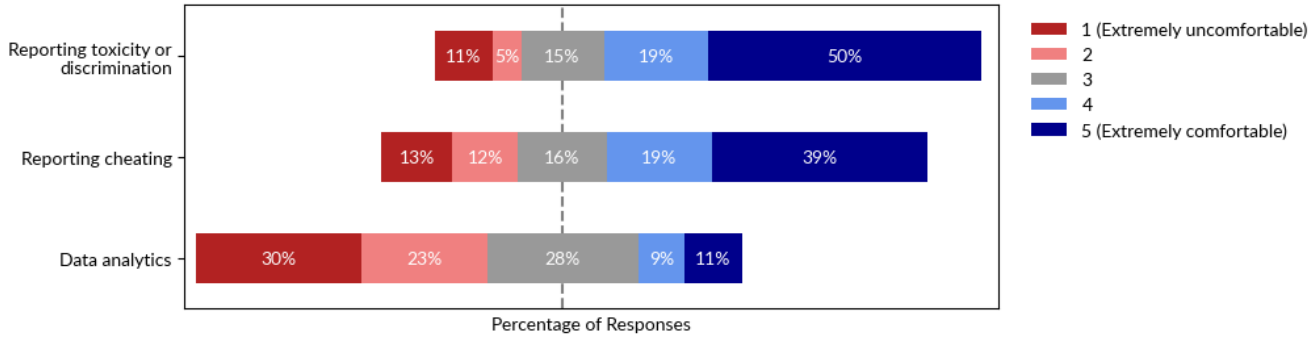
Most frequently mentioned were verbal attacks. These commonly included saying slurs, with participants mentioning, "common use of the 'r' word as an adjective to describe something negative," "a lot of use of the N-word as well as homosexual slurs," and "incorporating slurs into their insults." Bullying (without disparaging any particular identity) was also common; participants mentioned name-calling, "flaming for making simple mistakes" and "trash talking." Trolling, which we define as hateful or insulting language with a perceived non-serious intent to provoke a response, was also mentioned by participants as "people are just saying [discrimination] to say it" and gamers using derogatory language "openly and randomly." Participants also mentioned attacks based on players' voices in voice chat. For example, multiple respondents noted being targeted due to having a higher voice, expressing sentiments like, "I get yelled at for having a female voice a lot" and "I'm a female gamer so I experience a lot of verbal abuse."

Most of the experiences mentioned in free-form text responses did not specify discrimination based on a particular identity group. Of those that did, the most prevalent identities mentioned as targeted in specific experiences from free-form responses mirrored those mentioned as common in the quantitative results: women (*n* = 22), people of color (*n* = 18), and LGBTQ+ people (*n* = 13).

4.4 Which developers are perceived as fostering positive gaming environments

As seen in Table 7, respondents indicated that the developer that they considered as fostering the most positive environment was Nintendo (54 responses, far greater than the number of responses to any other game developer). This could be related to our sample, who most often played Super Smash Bros., a game produced by Nintendo. It also could be related to Nintendo's limited interactions between players and thus limited affordances for player toxicity.

Figure 4: Distribution of responses to the question, "How comfortable do you feel about voice chats being recorded and saved?" for different purposes listed on the y-axis.



4.5 Privacy concerns with addressing hate and harassment

Addressing toxic behavior in gaming often requires some sort of recording of that behavior, which brings up privacy concerns. We asked survey participants how comfortable they would be with voice chat, a common medium for toxicity, being recorded for different purposes. Figure 4 displays distributions of responses. Respondents were most comfortable with voice chat being recorded for reporting toxicity or discrimination, 50% saying they were "extremely comfortable" with such a use. Respondents were slightly less comfortable with recording voice chat for reporting cheating, and much less comfortable with voice chat being recorded for data analytics (30% being "extremely uncomfortable" while only 11% were "extremely comfortable" with such a use).

5. Discussion

Players cited gender-based discrimination and misogyny as the most popular form of discrimination across both quantitative survey responses and free-form text responses, with 41% of respondents noting that they saw misogyny in nearly or almost every game (a 4 or 5 on our Likert scale). Anti-LGBTQ+ and racial harassment were other top forms of hate reported by players. Although the sample was quite limited in terms of racial diversity, there was a relatively even balance of men and women, with a decent representation (*n* = 17) of non-binary gamers. This could have affected the results as misogynistic behavior was the top hate-based issue witnessed in online games.

Players from marginalized groups were more likely to see discrimination in games they played. 55% of female gamers reported seeing misogyny in nearly or almost every game compared to only 24% for male gamers. Though only 11 survey participants identified "Black" as one of their racial identities, Black respondents responded seeing racial harassment at much higher rates than white respondents. This could be due to the fact that these groups are actually experiencing this harassment and not simply passively observing it, though our survey questions never specifically asked if participants themselves were targeted.

In free-form responses, participants noted many specific actions through which they witnessed hate and harassment. The most commonly observed action was saying slurs, with general bullying and trolling. Participants often mentioned voice chat, further emphasizing the need for voice chat scrutiny from game developers and researchers.

6. Conclusion and future work

This white paper summarizes a preliminary study conducted by researchers at the Collaboratory Against Hate surveying attendees at a regional anime convention, Tekko, in Pittsburgh in the summer of 2023. The 5-minute survey asked participants about their experiences with hate, harassment, and discrimination while playing online games.

Survey respondents (n = 152) reported witnessing high levels of misogyny, anti-LGBTQ+ hate, and racial harassment. Hateful actions included gamers saying slurs (the most commonly mentioned experience), bullying unrelated to specific targeted identities, and trolling. Participants generally noted that they were comfortable with voice chat being recorded for purposes of reporting toxicity and discrimination, in contrast with being generally uncomfortable recording voice chat for data analytics.

In the future, CAH researchers hope to conduct follow-up interview studies to learn more about the specific experiences of gamers, particularly groups of gamers such as women and LGBTQ+ gamers, and gamers of color, to better understand the effects of hate and harassment in online gaming spaces. CAH researchers want to learn more about the experiences of these groups with discrimination mentioned in the survey results, including misogynistic behavior prompted by gamers using the voice chat function. We also aim to understand the actions that victims of hate and harassment took associated with experiencing hate and harassment, whether that be disabling voice chat or dropping out of online gaming altogether. We also wish to study the gaming environments in which hate and harassment is occurring–in recreational play or competitive esports, for example. Such survey and interview research could complement observational studies of dynamics in gaming voice chat, which we also wish to pursue in the future by collecting recorded video of gameplay from streaming services. We hope our research will inform policies taken by game developers and others seeking to mitigate hate in online gaming.

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Appendix

The survey questions we asked are reproduced below.

1. I am 18 or older
    - Yes
    - No (survey stops here)

2. How long have you been an active competitive video game player?
    - Less than a year
    - Less than a year
    - 1-2 years
    - 3-5 years
    - 6-10 years
    - 11-20 years
    - More than 20 years
    - I am not an active player

3. What is your main motivation for playing competitive video games?
    - To relax
    - To connect with people
    - To experience new worlds
    - To compete
    - To have fun
    - Other (please specify)

3. Which of the following competitive games do you most frequently play? Please check all that apply.
    - League of Legends
    - DOTA 2
    - Valorant
    - Counter Strike
    - World of Warcraft
    - Final Fantasy XIV Online
    - Call of Duty
    - Rocket League
    - Apex Legends
    - Fortnite
    - Player Unknown's Battlegrounds
    - Guild Wars 2
    - Starcraft
    - Eve Online
    - Tom Clancy's Rainbow-Six Siege
    - Pokémon (OCG, RPG, Unite)
    - War Thunder
    - World of Tanks
    - Minecraft
    - Halo
    - Destiny
    - Super Smash Bros
    - Other (please specify)

4. Which developer do you think does the most to promote a positive competitive playing environment?
    - Riot Games
    - Activision
    - Blizzard
    - Nintendo
    - Valve
    - EA
    - Epic Games
    - I'm not sure
    - Other

5. What is the best way a developer has promoted a positive competitive playing environment?
   Free text response

6. How many hours per week do you typically spend playing competitive video games?
    - Fewer than 6
    - 6-10
    - 11-15
    - 16-20
    - 21-25
    - 26-30
    - 31-35
    - 36-40
    - 41-45
    - 46-50
    - More than 50

7. Do you have an Alexa or Google Home in your house? *This was included since we wanted to recruit broadly, not just among gamers who cared about issues of hate and harassment.*
    - Yes
    - No

8. How comfortable do you feel about voice chats being recorded and saved for the following?
   1 to 5 Likert scale radio buttons, 1 being Extremely Uncomfortable and 5 being Extremely Comfortable
    - Data Analytics
    - Reporting cheating
    - Reporting toxicity or discrimination

9. How often do you experience the following in multiplayer games?
   1 to 5 Likert scale radio buttons, 1 being Fewer than every 10 games and 5 being Almost every game
    - Smurfing
    - Bots
    - Wall or aim hacks

10. What type of cheating appears the most in your online competitive games?
    Free text response

11. How often do you see the following appear in multiplayer matches?
    1 to 5 Likert scale radio buttons, 1 being Fewer than every 10 games and 5 being Almost every game
    - Ableism (anti-disability) rhetoric
    - Anti-LGBTQ+ slurs
    - Anti-Jewish slurs
    - Anti-Muslim slurs
    - Gender-based discrimination or misogyny
    - Racial Harassment

12. What are some examples of ways you see discrimination or hate appearing in online gaming communities?
    Free text response

13. What do you think game developers should do to reduce the prevalence of hate on their platforms?
    Free text response

14. If you have any other thoughts or experiences about hate or discrimination in online gaming communities, please share them here.
    Free text response

15. Please provide your age:
    Text box

16. How do you describe your race or ethnic identity? (select all that apply)
    - American Indian or Alaska Native
    - Asian
    - Black or African American
    - White or Caucasian
    - Hispanic and/or Latino/Latina/Latinx
    - Native Hawaiian or Pacific Islander
    - Prefer to self-describe (*text box*)
    - Prefer not to say

17. What is your gender?
    - Male
    - Female
    - Non-binary / third gender
    - Prefer to self-describe (*text box*)
    - Prefer not to say