

# THE VOICE CHAT TOXICITY REPORT FOR ONLINE GAMES

CONSUMER PERSPECTIVES AND SENTIMENT  
2023



## About This Report - How Voice Chat is Changing Gaming



We all know that online gaming has grown rapidly over the past decade. However, beyond the user growth and the amplification brought on by the pandemic, one of the biggest changes in the industry is the shift toward games as social experiences. Games have always been social to a degree, but the introduction of in-game and off-platform voice and text chat communications for players has accelerated the trend.

This shift has been great for both players and game makers. It has added to the game experience for players both from a social standpoint and for game coordination in multiplayer titles. For game makers, players are getting more value, playing longer, and turning over less frequently. This is particularly true when considering voice chat.

Data show that voice chat increases the frequency of game play and session length; key metrics that every game tracks. However,

the introduction of voice chat along with text chat and user-generated content sharing has also come with a downside—toxic behavior. These toxic events range from racial epithets to stalking, real world threats, and sexual harassment, to name a few. New data show that these incidents immediately impact gameplay by users, undermine a game's reputation, and have real consequences for players and game makers.

Speechly commissioned this research to establish a better understanding of consumer views around in-game voice chat, the impact of toxic behavior on game play, and the standard of moderation when incidents occur. We hope the findings prove useful for game makers as they consider their approaches to moderating toxic behavior in voice chat and moving us all to a better environment for online games.

**Otto Söderlund**  
*Speechly CEO and Co-founder*



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# About Voicebot

Voicebot produces the leading online publication, newsletter and podcast focused on AI industries ranging from voice and conversational AI to synthetic media and generative AI. Thousands of enterprises, entrepreneurs, developers, investors, analysts and other industry leaders look to Voicebot and Synthedia each week for the latest news, data, analysis, and insights defining next great computing platforms. At Voicebot, we give voice to a revolution.

# About Speechly

Speechly provides superfast speech recognition – on device, on premise, or in the cloud. Our easily customizable models can be deployed for speech recognition only or with a fine-tuned NLU and deliver industry leading accuracy, privacy, and cost efficiency. Born from AI research in the Nordics on some of the most complex global languages, Speechly is used by leading online games and metaverse virtual worlds for proactive voice chat monitoring and moderation, while both startups and large enterprises use our solutions for operating voice user interfaces for websites, applications, and products.

# Methodology

The survey was conducted in December 2022 with 1,159 U.S. adults age 18 or older that were representative of the U.S. Census demographic averages. Of these 1022 identified as gamers.

## Voice Chat Moderation Gets More Attention in 2022

Online game moderation was in the news throughout 2022 and voice chat was at the center of new activity. Riot Games began monitoring all voice chat in July for Valorant to combat toxic behavior and identify bad actors in “A beta program that will record and analyze players that are susceptible to verbal tirades,” reported MSN.

This followed Back 4 Blood’s decision in late 2021 to begin monitoring voice chat. An in-game notification reported by Gamerant at the time states, “Voice chat is recorded and used for moderation, user safety, and to operate and improve the services. By using chat, you agree to this use of data.”

These ideas are not exactly new. Sony implemented its “voice chat recording for moderation” with the PS5 release back in 2020. What is new is that more Triple-A games believe they must take action.

Sony VP Catherine Jensen commented in a blog post at the time, “Once the PS5 console launches, if a PS5 player needs to file a harassment report, they will be able to include up to a 40 second-long Voice Chat clip in their report – 20 seconds of the main conversation, plus an additional 10 seconds before and after the conversation with the other player selection. Only the most recent five minutes of a Voice Chat will be available for player use for this reporting function...It’s sole purpose is to help in reporting inappropriate behavior.”

Blizzard even got into the act in 2022. As reported by TheGamer, “Blizzard will start listening in to voice chat conversations, in a bid to curb abuse in Overwatch 2. This comes after many have complained that the community has become more toxic since the release of the sequel...Blizzard will now be able to check what was actually said, rather than rely on others to explain this.”



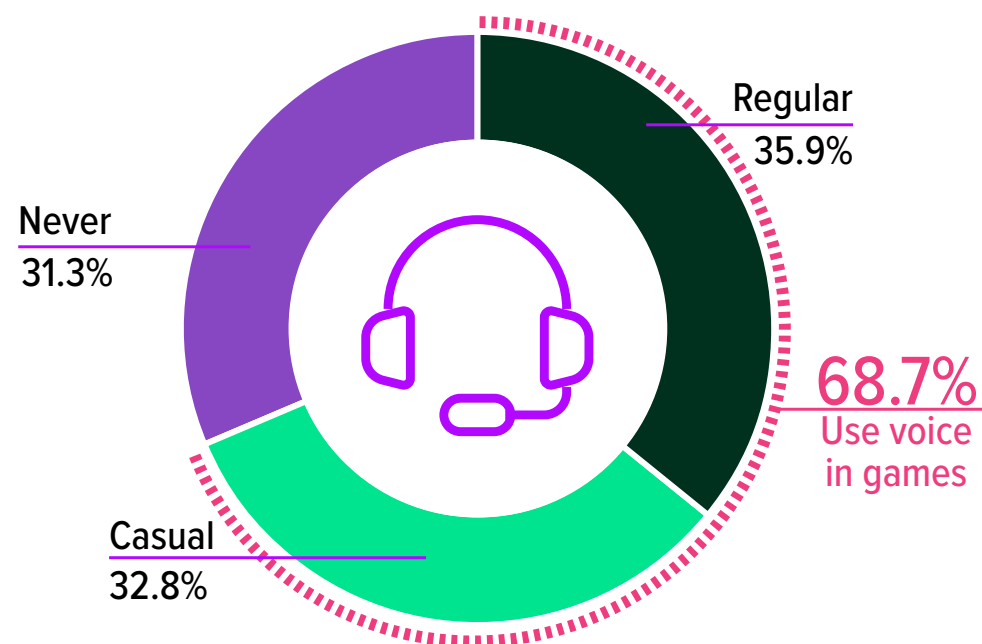
# The Role of Voice Chat in Online Gaming

The moves to take on toxic behavior in voice chat are driven by multiple trends. First, voice chat is very popular. It is used by 68% of online gamers. And, nearly half agree with the statement that “they like games more when using voice chat.”

Games have become a social activity beyond the pure entertainment value. Party chats connect friends even when they are not playing. These benefits are additive to the value of in-game play coordination and the ability to get help from more experienced users.

In addition, game makers are highly incentivized to provide and maintain a voice chat feature. “The metrics show that people who use communications during their gaming, game more and more often than those who don’t. We also find this holds true for any platform and any game type. So, voice is really a social element that adds stickiness and retention to games that you can’t get from something else,” said Todd Bouris, a manager of software engineering at Unity in a conference presentation.

Gamer Voice Chat Use 2023

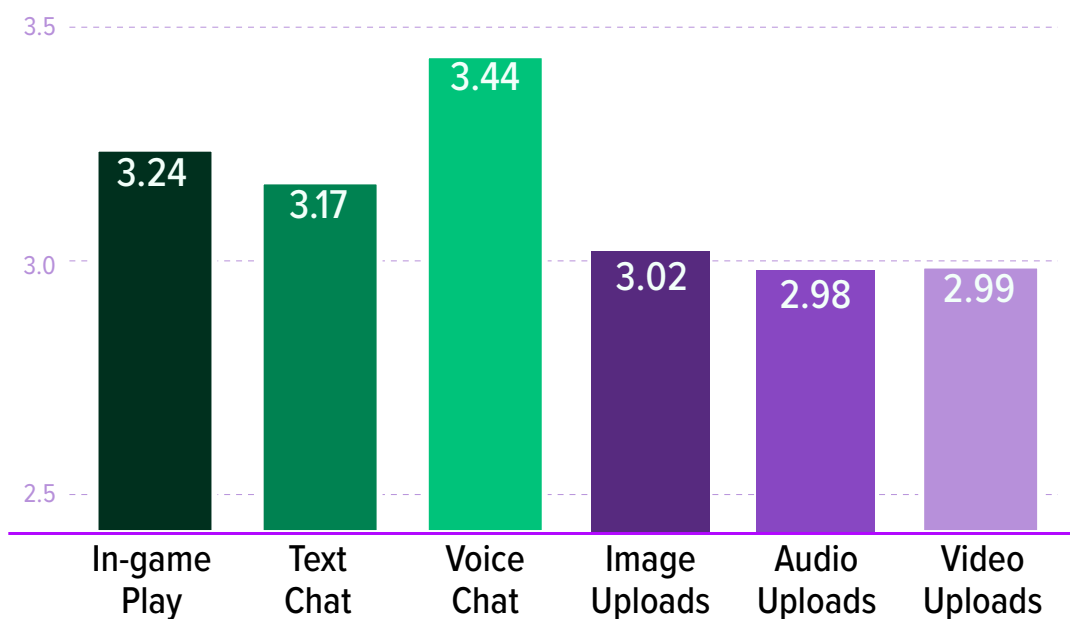


Source: Voicebot 2023



# Toxicity in Player Communications is Worst for Voice Chat

## Toxic Behavior by Game Engagement Channel



Source: Voicebot 2023



However, the rise in voice chat adoption for online games was accompanied by a rise in toxic behavior through the channel. Text and voice chat are both key vectors for toxic behavior, but game players told us that voice chat is where the incidents are the most frequent and most severe. In fact, text chat also trails in-game play for the severity.

Adding to this problem is that moderation for toxic events in voice chat are almost exclusively driven by complaints. That means after the incident occurred, the victim must file a report and game moderators must then investigate before the incident can be adjudicated. The burden is placed on the victims to seek justice and while waiting, they often reduce gameplay due to the event.

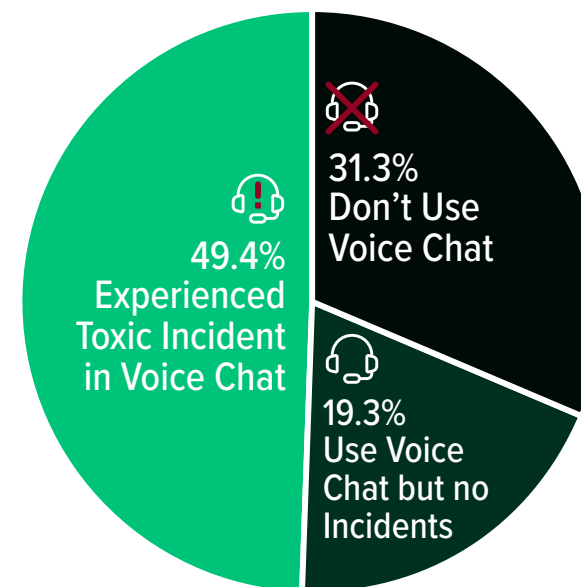
It is no wonder that gamers identify voice chat as the worst channel for toxicity. In-game play and text chat often have some automated features to flag or verify bad behavior. Because so few games transcribe or record voice chats, it is harder to catch toxic behavior quickly and confidently verify transgressions.

# 50% of all Gamers and 72% of Voice Chat Users Experience a Toxic Incident

It is easy to understand why players say voice chat is the most problematic of the channels for toxicity when you consider three data points.

1. Nearly 50% of all online game players have experienced a toxic incident in voice chat. That reflects 72% of online game players that have tried voice chat (page 28).
2. The number of incidents per voice chat user is 35% higher than in text chat (page 30).
3. The frequency of every category of offense is 50% - 200% higher in voice chat than text chat (page 57). Some of the biggest differences are for physical threats, doxing, sexually explicit topics, and sexual harassment.

## Gamer Experience with Toxic Behavior in Voice Chat

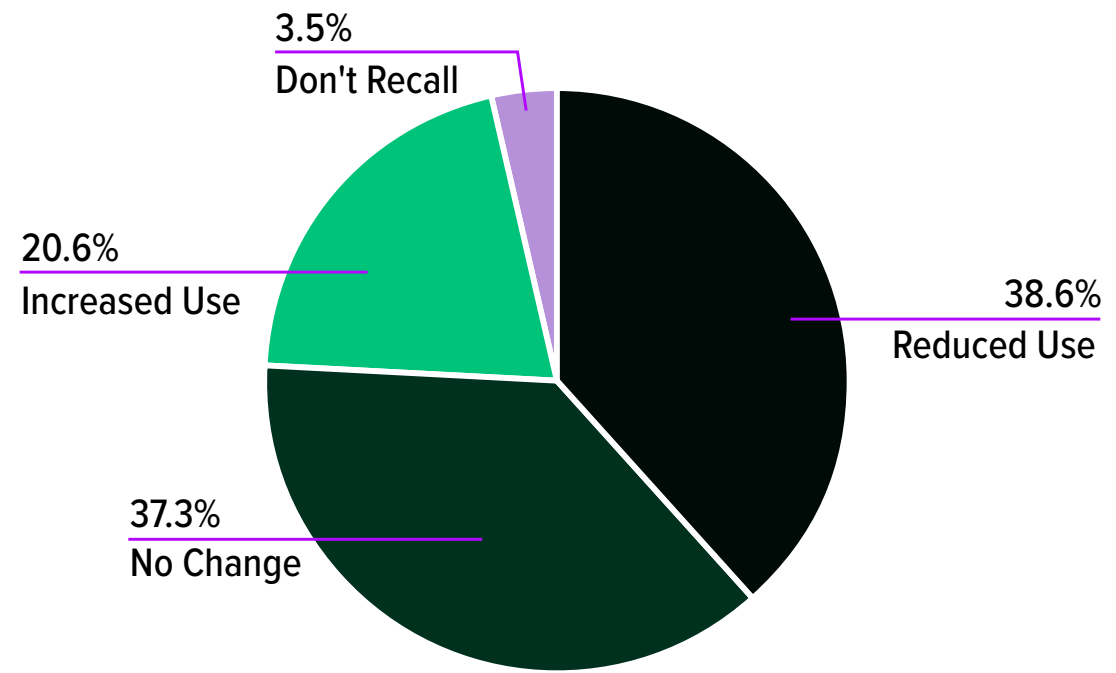


Source: Voicebot 2023



# Voice Chat Toxicity Impacts Player Behavior

Impact of Toxic Behavior Incident on Game Use



Source: Voicebot 2023



Game makers may take solace in the fact that many users are generally pleased with the moderation actions after a toxic incident. However, they may not be so sanguine about how it impacts gameplay and retention.

Over 38% of toxic behavior victims permanently reduce game use following an incident. In the immediate aftermath, we found that about 5% don't play again that day, while 23% stop playing for a shorter period (page 34). Forty percent turn off voice chat for some period of time. Given that players say voice chat enhances the game experience, the move to go silent likely has negative effects on their enjoyment as well as for other players.

Stalking and sexual harassment are the types of incidents that are most likely to lead to reduced game play and churn (page 36). This is followed by intentional embarrassment and real-world threats. Sexual harassment is also the category most likely to lead to players harboring more negative sentiment towards a game. Offensive names and bullying are close behind.

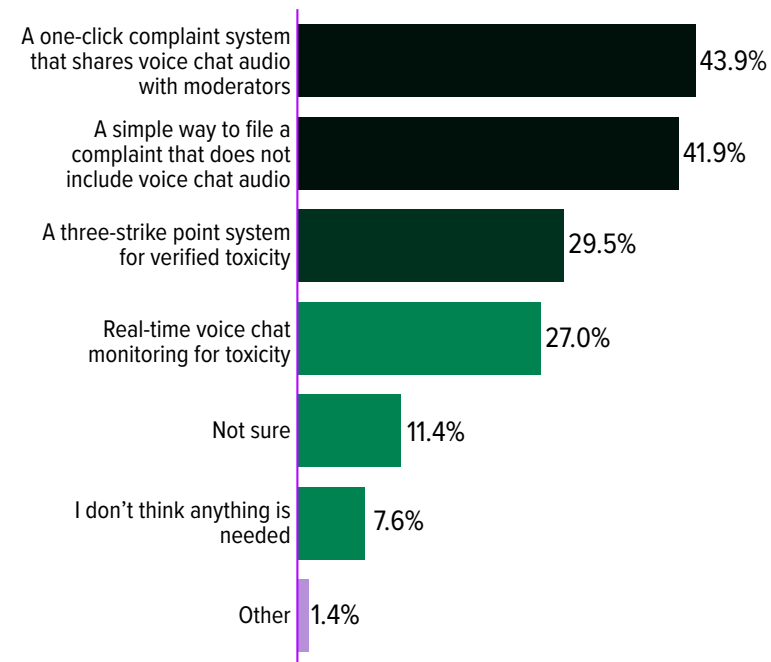


# Toxic Behavior Victims Want New Moderation Features

Victims of toxic behavior favor more moderation and many would like to see proactive moderation instituted. In fact, the most frequent game players are the most likely to support real-time voice chat monitoring and moderation. While 30% of gamers favor this idea, it is actively supported by 33% of high frequency players (page 50). We suspect this is because they are also the most likely to use voice chat and be victims of toxic incidents.

The most popular solution option cited by game players that had faced toxic behavior at least once was a one-click complaint system that automatically shares the voice chat audio with moderators. When you look at gamers that selected this or the real-time voice chat monitoring option, you find that about 57% favor some type of voice chat recording and would like to see automation brought to these processes.

## What Gamers Want for Voice Chat Moderation



Source: Voicebot 2023



## What's involved in Voice Chat Moderation

Game makers are starting to consider what is involved with voice chat moderation and how it differs from text chat and other vectors of bad behavior. Many had expected they could simply use similar technologies and processes to text chat. Those techniques invariably fall short of the need. For example, many moderation solutions for text chat rely on keyword spotting. They identify bad words and scrub them. This is not so easy when it comes to voice chat. Context really matters.

To establish context, the system must be able to parse the dialogue using natural language understanding (NLU) to separate the toxic from the benign. It is important to not only identify the bad incidents but also to not introduce false positives. Our research shows that over half of voice chat users say they have been falsely accused of toxic behavior.

NLUs are designed to analyze text. That means voice chat must be transcribed by automated speech recognition (ASR). Many off-the-shelf ASRs suffer from high word error rates (WER) which increases the likelihood false positives and false negatives. Proactive voice chat moderation comes with additional needs. The ASR must have high accuracy, low latency, protect the user's privacy, and be cost effective.

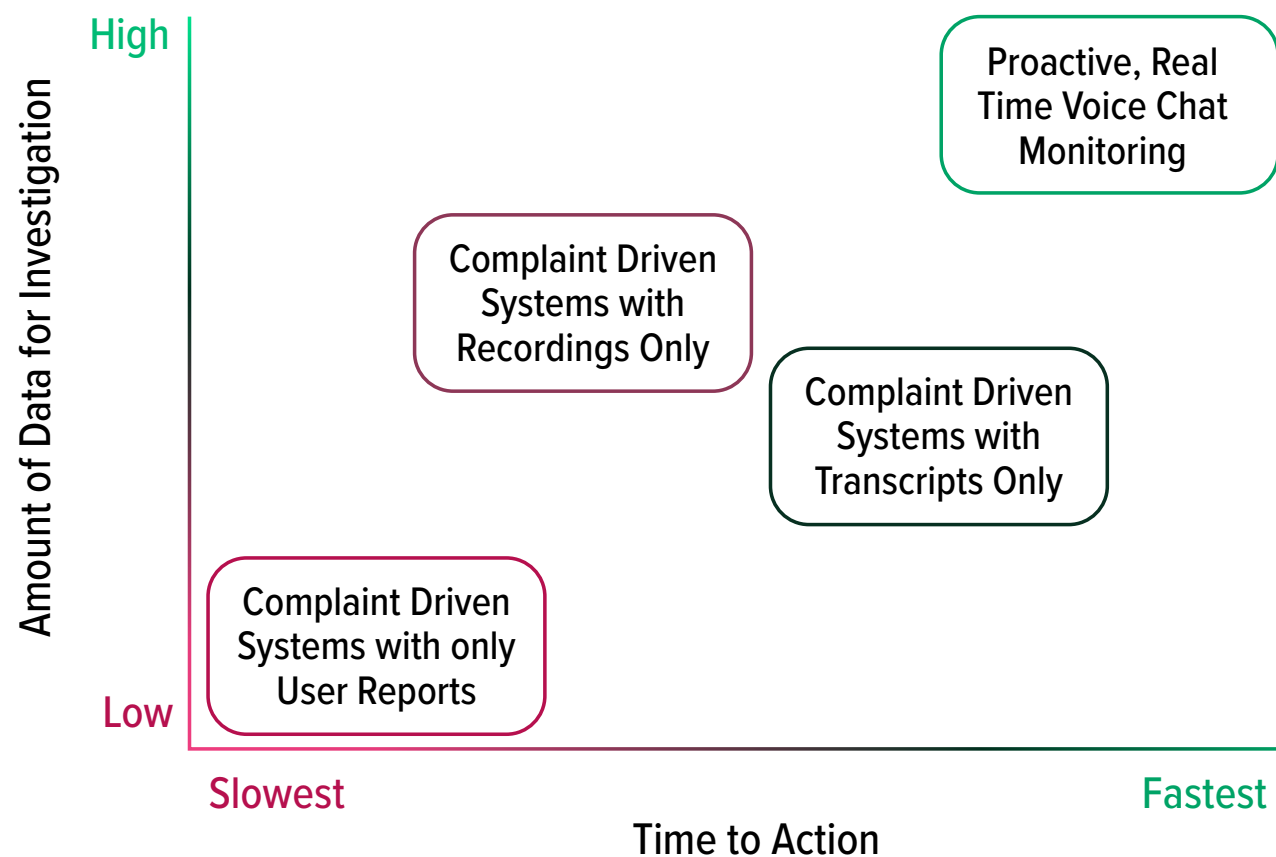
It is useful to distinguish between monitoring and moderation. Moderation is most often reactive and viewed as either the entire process or the intervention after a toxic behavior signal – typically based on a user complaint. Monitoring automatically detects signals so that moderation steps can be taken proactively before a complaint is submitted or in instances where no complaint is made but policy violations occurred.

## Voice Chat Moderation Challenges and Solutions

Proactive voice chat moderation comes with some predictable challenges and a lot of misconceptions. However, advanced ASR and NLU technologies can typically overcome the challenges and correct common misconceptions.

- **NLU Performance** - Language is complex and interpersonal interactions include a lot of context. A high performing system will have a specially trained NLU designed to accurately assess the dialogue specific to the game and its community.
- **ASR Accuracy** - NLUs depend on accurate dialogue transcripts. If the word error rate (WER) is high, the result will be false positives (identifying issues where none existed) and false negatives (missing issues that should be flagged). Most games will benefit from custom ASR models that minimize WER and raise NLU accuracy.
- **ASR Latency** - Time delays between what is spoken and when the transcript is available for NLU analysis can be the difference between a swift preventative intervention and an incident that escalates and causes more harm. Some ASR providers will suggest that 30 seconds or even one to two minutes is sufficient. However, this severely limits the ability intervene quickly.
- **Privacy** - This is also an often overlooked feature of ASRs. It is important to users and to game makers. The easiest way to ensure privacy is to run the ASR on the user's device. That has the added benefit reducing latency and cost.
- **Cost** - Anyone that has used cloud-based ASR knows the costs can escalate quickly. It is important for the ASR to minimize expenses while still enabling the necessary data capture and high accuracy.

# Voice Chat Moderation Maturity Model



You can think about voice chat moderation in terms of a simple maturity model. Complaint-driven systems, which are most prevalent today, are the slowest to react and resolve issues and have the least amount of data for moderators to use for investigations. This means adjudication error rates will be higher.

Proactive, real-time voice chat moderation can act nearly instantaneously and offers the most data. In between these are the systems that provide either recordings or transcripts for moderators to consult when conducting investigations or audits.





# Voice Chat in Online Games

## Voice Chat is Now a Core Feature of Online Gaming

Voice chat has become a must-have feature in many online games. It has obvious benefits in multiplayer games where coordination is either required or enhances the game experience. Voice chat has also become a key feature to facilitate social connections among players which we noted is one of the most important trends driving online game adoption and increased play.

Data have shown for several years that voice chat also offers tangible benefits for game makers. A presentation at the Unite Copenhagen conference in 2019 revealed that introducing voice chat increases frequency of play, session time, and user retention. These are benefits beyond text chat which has significant limitations for use during play.

Given the earlier data, and what we know about the impact on game usage metrics, it is not surprising that consumers have embraced voice chat and developed clearly favorable views of the feature. Our survey of over 1,000 players found that nearly half believe voice chat improves the game experience, double the number that think it does not. The favorable sentiment holds true for both in-game voice chat and when through a third-party platform.

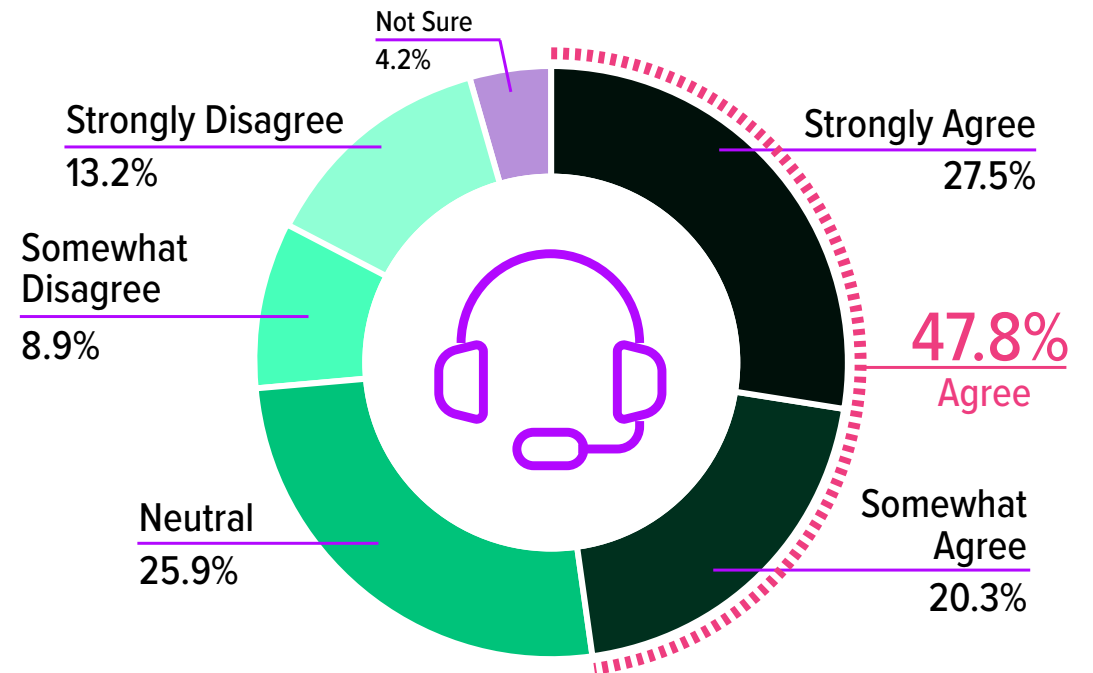
In addition, voice chat today is nearly at parity with text chat use which was implemented far earlier and is more widely available. Gamers say hands-free communication with friends is a draw for more frequent play while also valuing it for making new friends and getting help with gameplay.

# Gamers Like Voice Chat

- Nearly half of gamers believe voice chat improves the game experience (47.8%)
- Voice chat is considered a core feature of games where players are coordinating action. However, many gamers are primarily interested in using voice chat to connect socially with other players, mostly their friends. They sometimes will be on a voice chat and not even competing in the same game sessions, arenas, or even playing.
- Over one-in-four U.S. adult game players strongly agree that they “like games more when using voice chat” and another one-in-five somewhat agree.
- Only 22% disagree with the statement that games are better with voice chat.
- Interestingly, the strongly agree category represents a plurality of responses.

## Gamer Sentiment About Voice Chat

*“I like games more when using voice chat.”*



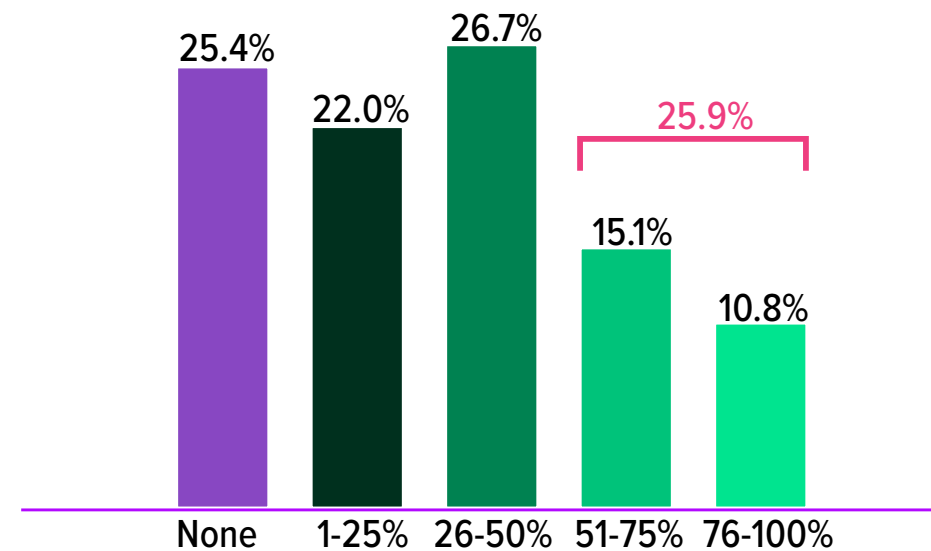
Source: Voicebot 2023



## Voice Chat is Broadly Available

- About one-quarter of game players said that none of the games they play most frequently have voice chat. Similarly, 25.9% say that over half of the games they play regularly include voice chat.
- Not surprisingly, the heaviest users of voice chat are also the most likely to have most of their games offer a voice chat option. Much of this is attributed to the genre of games they play and the platforms they use.
- For example, 67% of gamers that have never used voice chat say that none of the games they play offer the feature. Granted, that means one-third of them do offer the feature but the players do not use it.
- Players that said they use voice chat almost every time or every time they play say that about three out of five games they play offer voice chat.

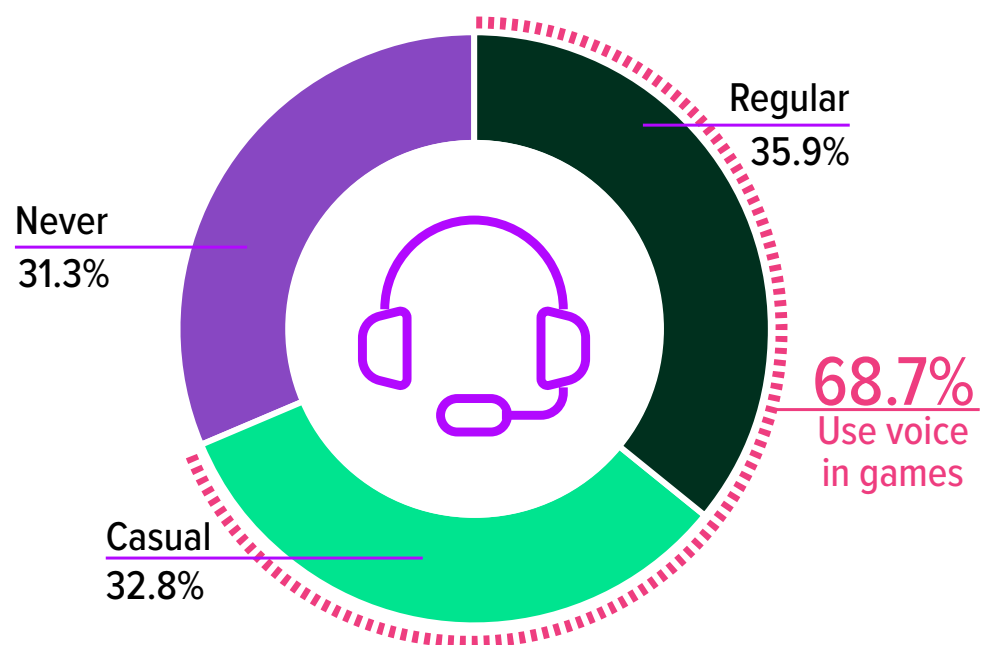
Percent of Games Players Say they Use That Include Voice Chat





# Voice Chat Use in Games is Common

## Gamer Voice Chat Use 2023



Source: Voicebot 2023

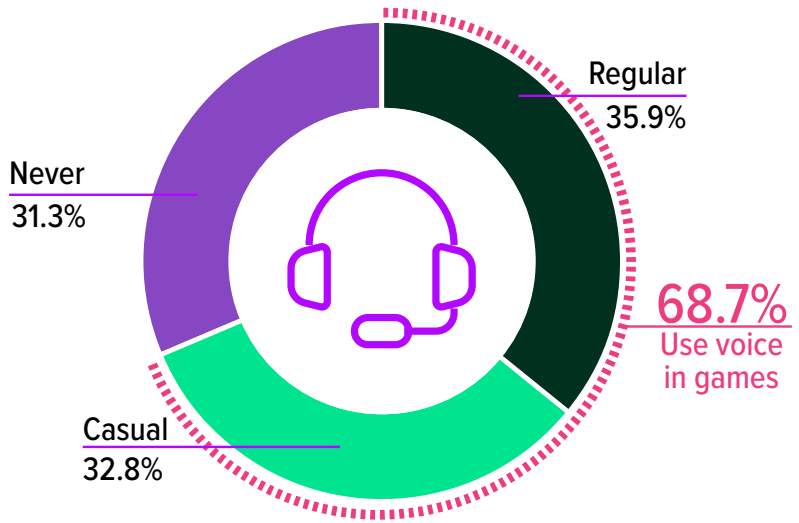


- More than two-thirds of online gamers have used voice chat while playing (68.7%) with 35.9% saying they are regular users and 32.8% are categorized as casual users of the feature.
- Just under one-third of the game players say they never use voice chat.
- As you might expect, regular users of voice chat were also the most likely to strongly agree with the statement that voice chat makes the gaming experience better. 76% of the game players that use voice chat every time they play and 50% of those that use it almost every time they play strongly agreed that voice chat offers significant value.
- By contrast, over one-third of those players that never use voice chat strongly disagreed that voice chat makes gaming experiences better.
- Players that never use voice chat today are the least likely to have experienced a toxic incident while playing an online game.

# Voice Chat Use is Nearly at Parity with Text Chat

- Voice chat is often compared to text chat and some view these channels interchangeably. However, the usage profile and features are very different.
- One key difference is in the frequency of use. Voice chat use leans slightly toward regular users while two-thirds of text chat users are casual users.

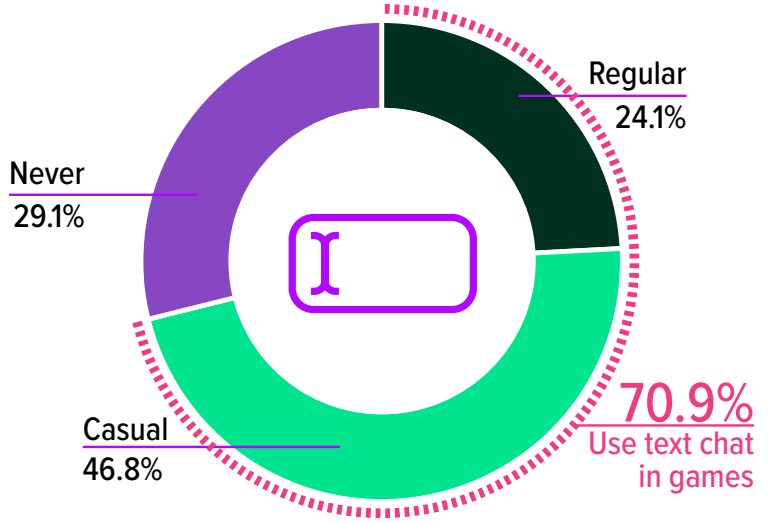
Gamer Voice Chat Use



Source: Voicebot 2023



Gamer Text Chat Use



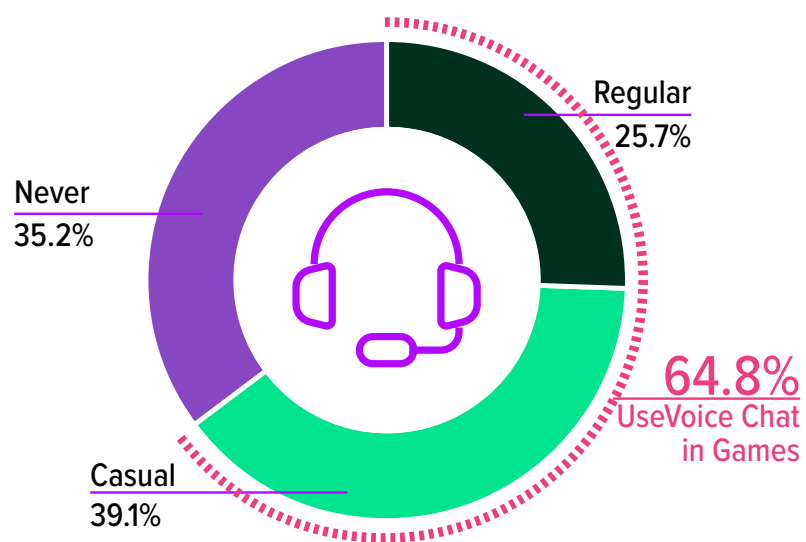
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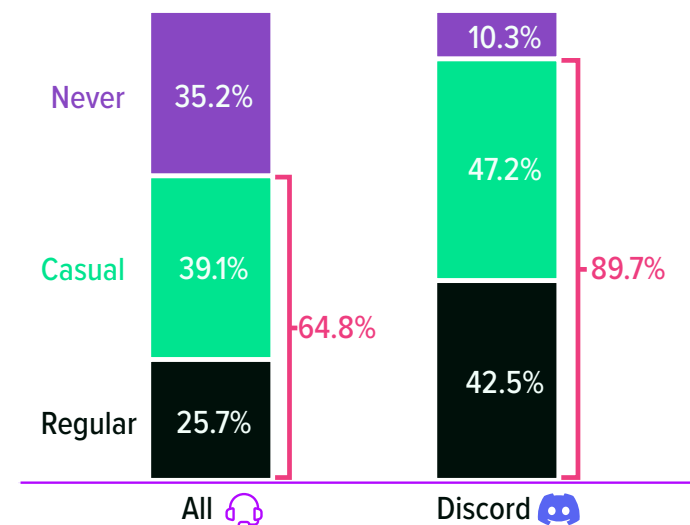
# Voice Chat is Done on and Off Game Platforms

- Voice chat is not only used inside the game features. Over 64% of gamers have used Discord or another platform for voice chat while playing. The data suggests over 90% of these gamers have used another platform at least once.
- Discord users are very heavy users of voice chat. While over 64% of gamers use voice chat on another platform, just under 90% of Discord users employ voice chat in a similar way.

Gamer Use of Voice Chat on Another Platform While Playing



Discord Users of Voice Chat Outside of Game Platforms While Playing



Source: Voicebot 2023



Source: Voicebot 2023

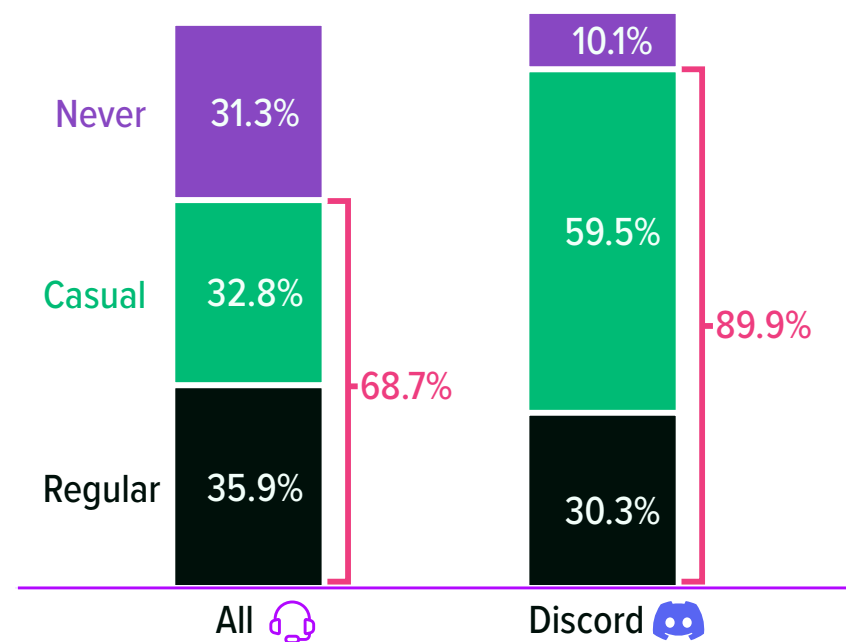




## Discord Users Employ Voice Chat More Often, But...

- If you isolate Discord users, you find that they are heavier voice chat users both inside and outside of the in-game features.
- Just over two-thirds of Discord users employ voice chat features inside of games and nearly 90% use Discord for voice chat at least occasionally when playing
- However, you can also see that Discord users of in-game voice chat are more likely to be casual voice chat users overall. If you remove the users that never employ voice chat at all you see that two-thirds of Discord users are casual users of voice chat and only one-third are regular users.
- By contrast, 52% of all in-game voice chat users are regular users. The most intense users employ voice chat inside the game itself when available.

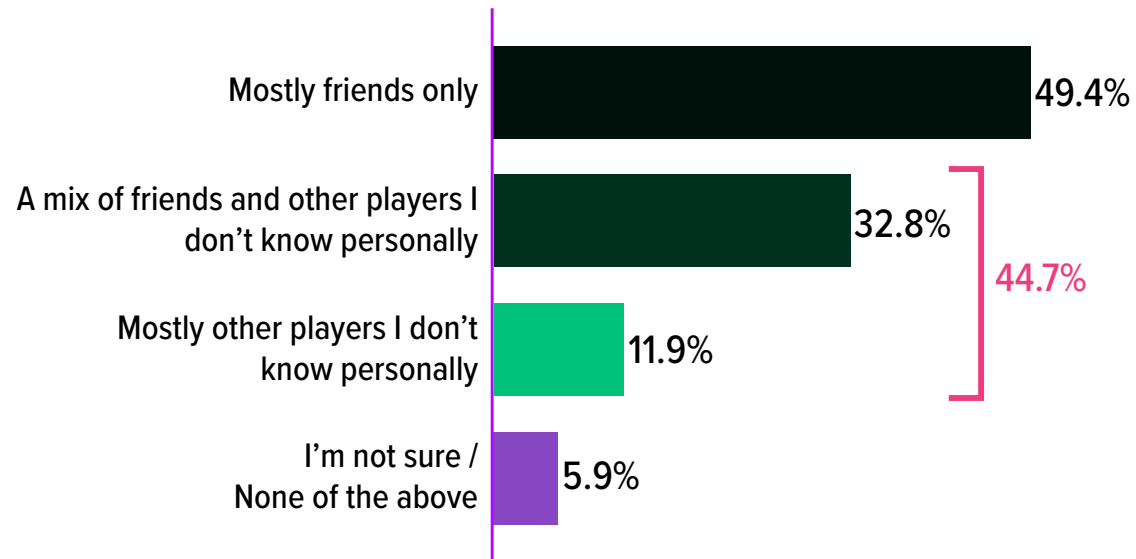
**Discord Users Frequency of Voice Chat Use While Gaming**





## Voice Chat is Primarily for Friends but Not Exclusively

### Who Gamers Connect with Via Voice Chat

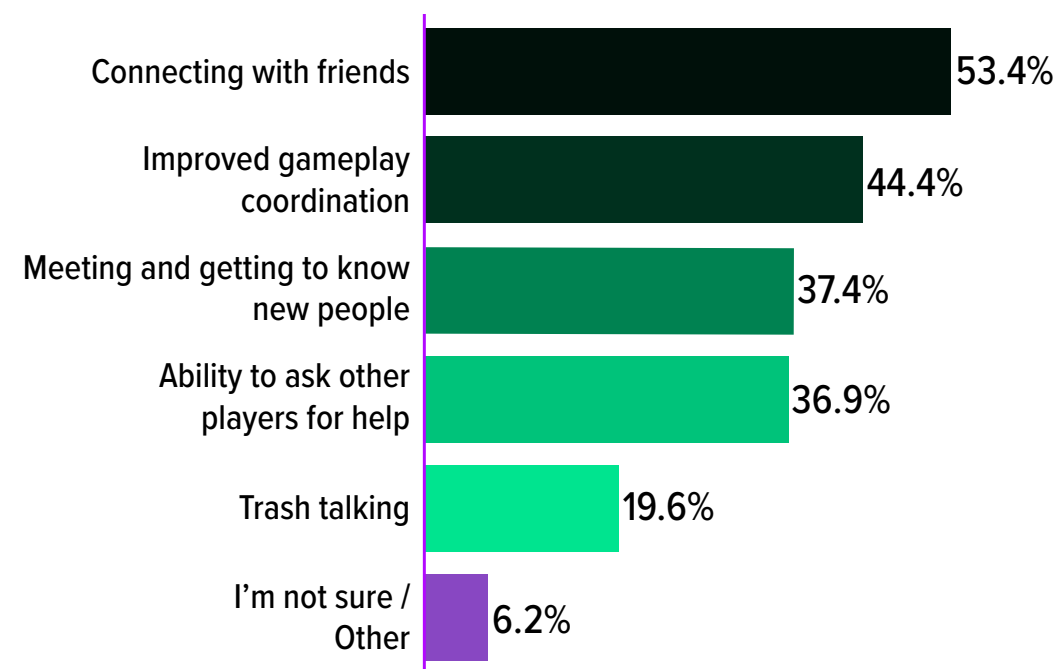


- About half of game players stick to their friend groups when using voice chat. However, about 45% of game players are using the voice chat as a way of connecting with new people.
- This has important implications for voice chat moderation. The risk of toxicity that rises to the level of a player grievance is lower when only friends are involved. This is not to say friends are immune from creating toxic incidents or engaging in harassment. It is just that the risk is less. However, if around half of gamers are regularly playing with strangers, the risk they will run into a bad actor rises.
- It is also worth noting that in-game voice chat is only one way the games are connecting players. Many enable out-of-game chat to forge social connections.

# What Gamers Like About Voice Chat

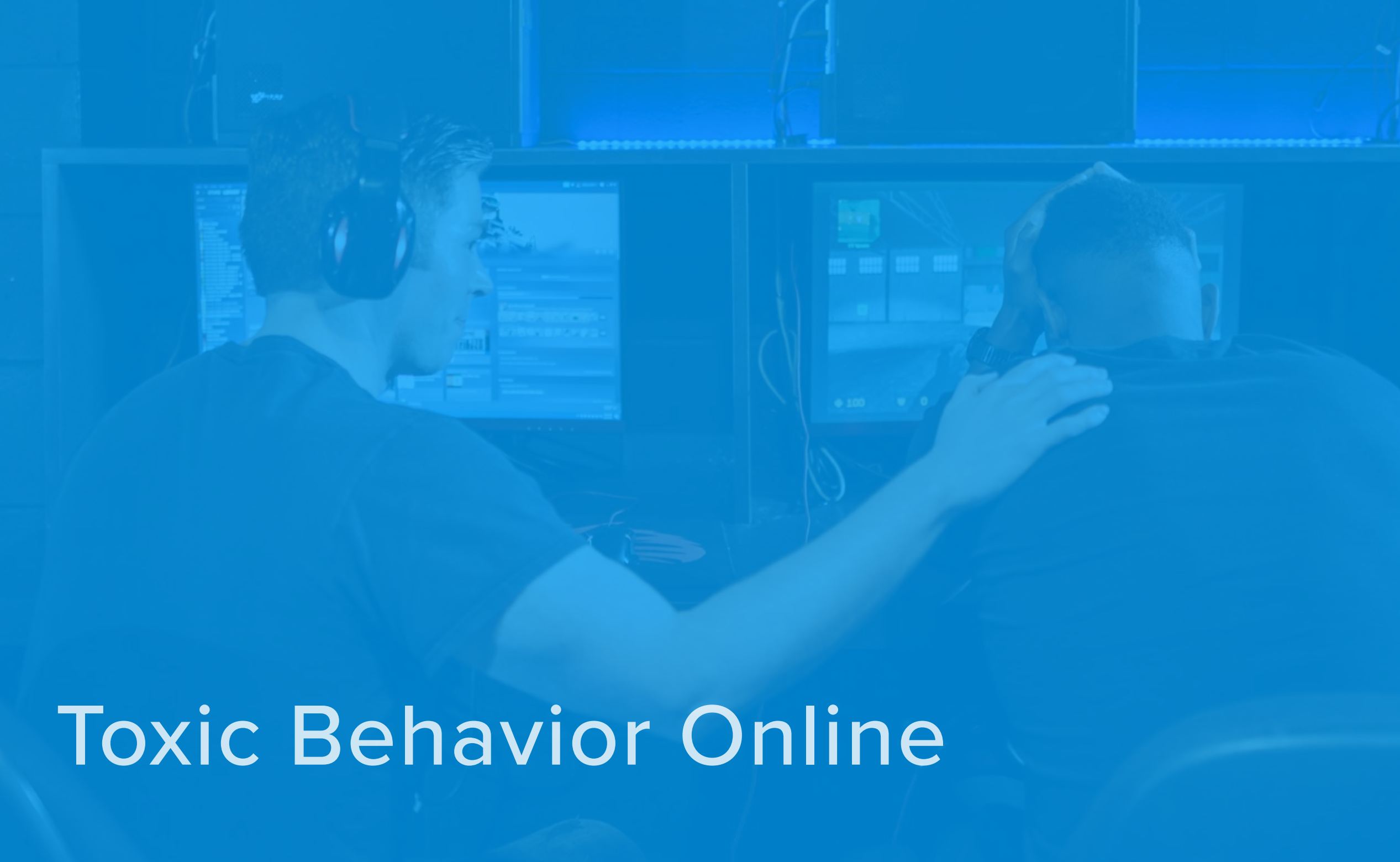
- Game players like voice chat for many reasons but topping the list is connecting with friends at 53.4%.
- A full nine percentage points behind in second place with 44.4% is improved gameplay coordination.
- Over 37% say they like voice chat because it is a place to meet people and make new friends.
- And yes, about one-in-five voice chat users like it for trash talking. No other comms channel is quite as powerful and convenient for this practice.
- What you see is that voice chat is viewed both as a means for creating social connections and for enhancing the in-game experience.

## How Gamers Use Voice Chat



Source: Voicebot 2023



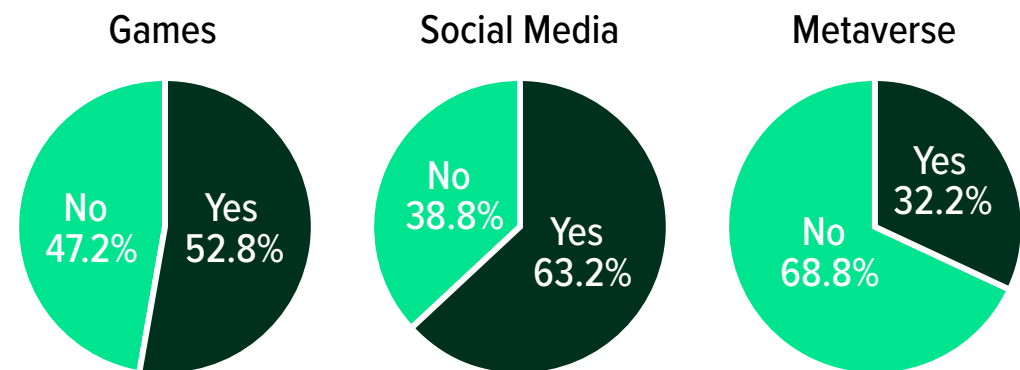


# Toxic Behavior Online

## Toxic Behavior is Present Across Digital Experiences

- Social media is the most used and also the most abused digital channel when it comes to toxic behavior. Over 63% of social media users say they have experienced a toxic event at least once.
- Toxic behavior is also common in gaming. Nearly 53% of U.S. adults that participate in online gaming have experienced a toxic event.
- Metaverses are in an earlier phase of their adoption cycle, and today are more tame than games and social media. However, they are not immune to bad behavior. Despite small user bases, 32% of metaverse users have experienced a toxic event.
- These figures represent any toxic event experienced by users. Common vectors of toxic behavior include user generated content, text chat, and voice chat.

### Encountered Toxicity by Platform



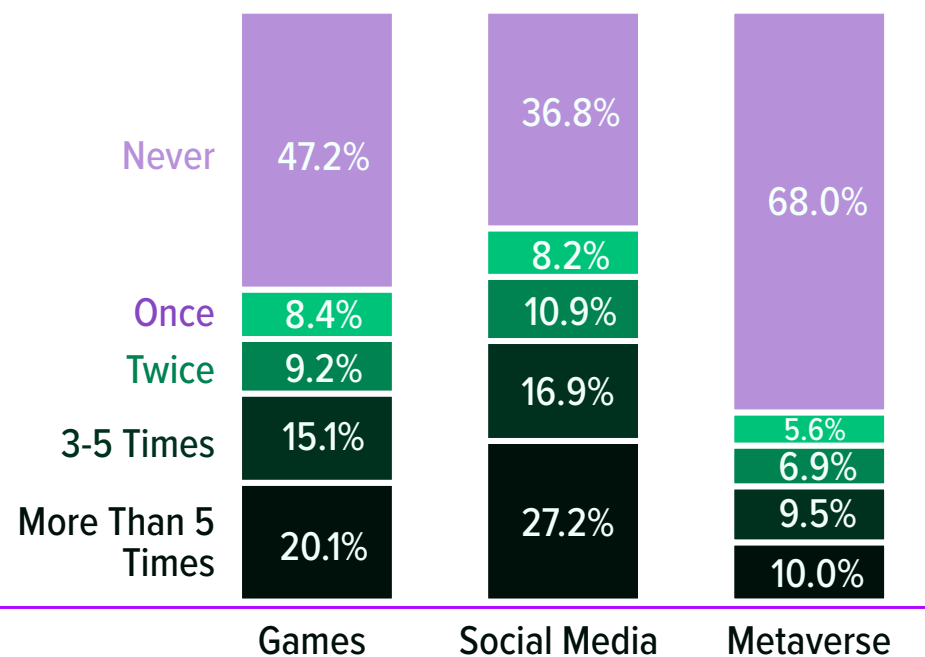
Source: Voicebot 2023





# Toxicity is Common Across Social Digital Experiences

## Frequency of Toxicity Encounters by Platform



- Users experience toxicity across online channels and usually, they report facing multiple incidents.
- We also see that a plurality of users that have experienced a toxic event have suffered more than 5 encounters in each channel. And 60-70% (page 29) of people that have faced toxic behavior have been subjected to at least 3 incidents.
- These data are not specific to voice chat. It includes multiple vectors of toxic behavior or harassment as identified by the users of these platforms. There are specific types of toxic behavior in voice and text chat from games listed later in the report.
- This report focuses on gaming. However, it is important to note that toxic behavior is a digital social phenomena as opposed to an online gaming issue alone.



Source: Voicebot 2023





# Toxic Behavior in Voice Chat

## Voice Chat is a Key Vector for Value and Toxicity

Voice chat is considered essential by game makers. Even beyond the impact on gameplay, voice chat is the most natural way to facilitate social connections in many games.

Voice chat users, historically, have played more frequently and longer than other players. A manager at Unity's Vivox division provided data at a 2019 conference that showed voice chat users spent twice the amount of time playing as non-voice users and were five times more likely to be playing after five weeks.

Text chat is a slightly more common feature in games, but it can be harder to use for game coordination and even social interactions because the players don't have time to type. However, voice chat is also a channel where toxic behavior and harassment are commonplace and gamers rate the severity as higher than other communications channels.

We should be clear that gamers are not necessarily encountering bad behavior every day. Many will have played hundreds or thousands of days of online games in thousands or tens of thousands of sessions. If a player has experienced toxic behavior in voice chat 3, 5, or 15 times, it will be a small percentage of total games and game days. The issue comes down to the impact on the players, game makers, and their communities. Key findings of this survey are that victims are most likely to experience multiple incidents, much of it goes unreported, and both gameplay and user loyalty drops afterward.

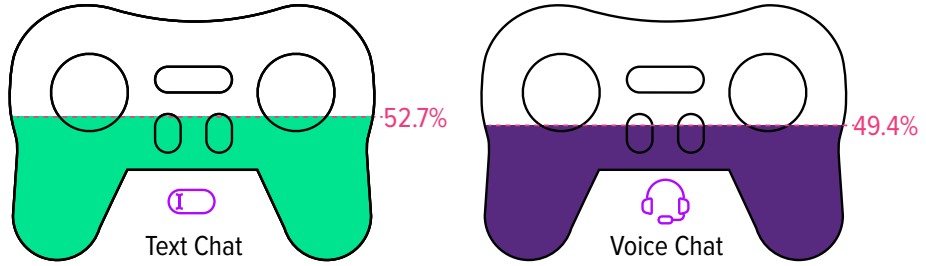
Voice chat is often a highly valued feature. And it is not alone in serving as a vector for toxicity. The complication is that it can be harder and more expensive to effectively moderate voice chat. Data on the following pages will help you better understand the problem from the gamer's perspective and provide insight on how to combat it.

# Toxic Incidents are Common in Gaming

- 49.4% of all U.S. adult game players experience a toxic behavior incident on voice chat and 52.7% for text chat. This is across all game genres and platforms.

- Users of text chat are slightly more likely to experience toxic behavior than those using voice chat, though both exceed seven-out-of-ten users.

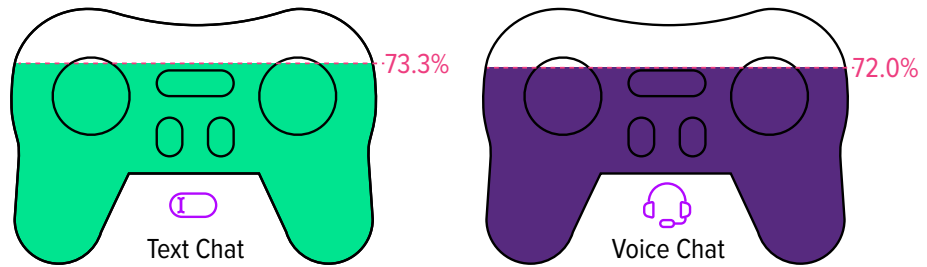
U.S. Adult Gamers that Experience a Voice and Text Chat Toxic Incidents



Source: Voicebot 2023



Voice and Text Chat Users That Face Toxic Incidents While Gaming



Source: Voicebot 2023







# Voice Chat Toxicity is Not a One Time Thing

Frequency of Voice Chat Toxicity



- More than six-out-of-ten game players have experienced toxic behavior or harassment in a voice chat at least three times.
- What we see in the data is that if you have experienced a toxic behavior incident, you are very likely to have been subjected to several of them. Nearly 30% of victims have encountered these incidents more than five times.
- These responses are not specific to a time frame, so you should consider them as “ever occurred.” Given the rise in voice chat availability and the seeming inevitability of the incidents, we expect the figures to rise.
- A significant risk is emerging that toxicity may become normalized because more than 70% of text and voice chat users confront toxic behavior incidents and most of those face multiple events.



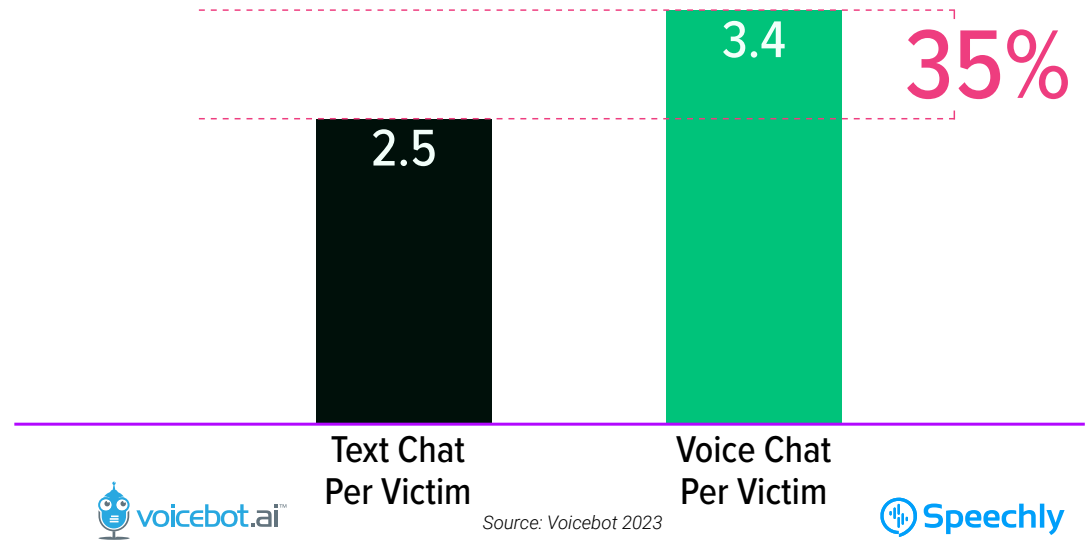
Source: Voicebot 2023



# Voice Chat Has a Higher Incident Rate Than Text Chat

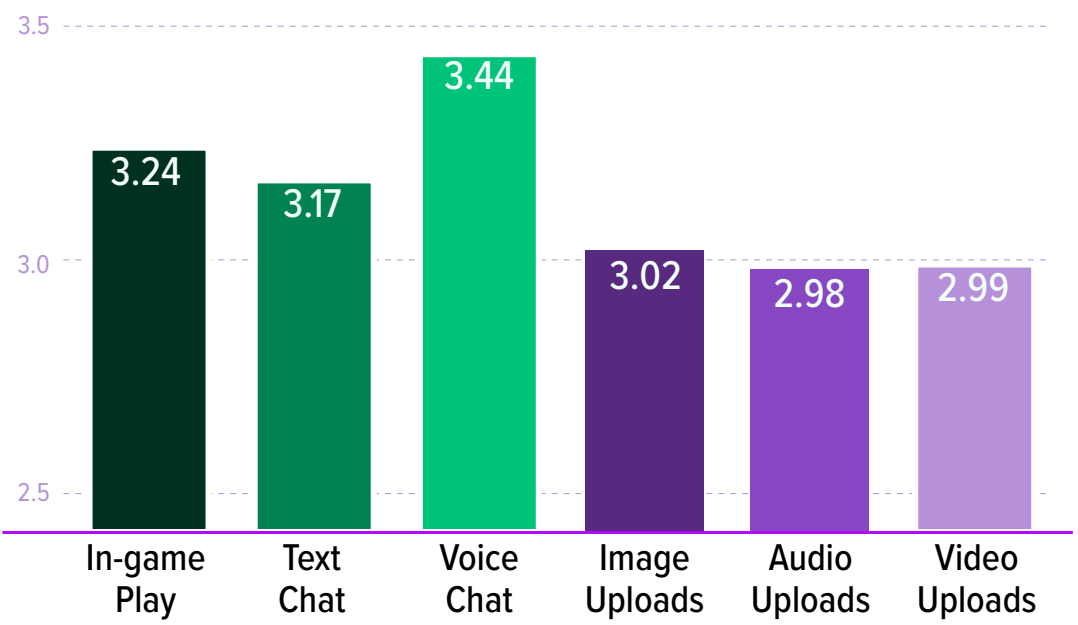
- When considering voice and text chat together, we find that voice chat users have, on average, experienced 35% more events per user.
- Text chat users report an average of 2.5 toxic behavior or harassment incidents. The figure is 3.4 for voice chat users.
- While we collected data on the type of incident, we have refrained from indicating here the level of severity of these incidents. There is debate within the gaming and social media industries about whether some forms of harassment or toxic behavior are more serious than others. While there is a legal difference as some incidents may constitute a crime, this raw data here only considers total incidents per user without passing judgment on severity.

Estimated Number of Toxic Behavior Incidents Per Victim in Voice and Text Chat



# Voice Chat is Considered the Biggest Problem

Toxic Behavior by Game Engagement Channel



- When considering a problem like toxicity, there is reach, frequency, and intensity. From a reach standpoint, voice chat toxicity is impacting about half of players. The frequency of incidents is about 3.4 bad experiences per voice chat user. From an intensity standpoint, players rank voice chat as the most problematic communication channel.
- Voice chat received a 3.44 weighted average response on a scale of 0 to 5 where a 5 indicates the channel was a big problem, a zero indicated “not at all” and 1 suggested a “very little” problem.
- The next highest channel for toxic behavior was in-game play at 3.24 followed by text chat at 3.17. Toxicity may reach a few more people via text chat but the severity of the issues are deemed to be less.



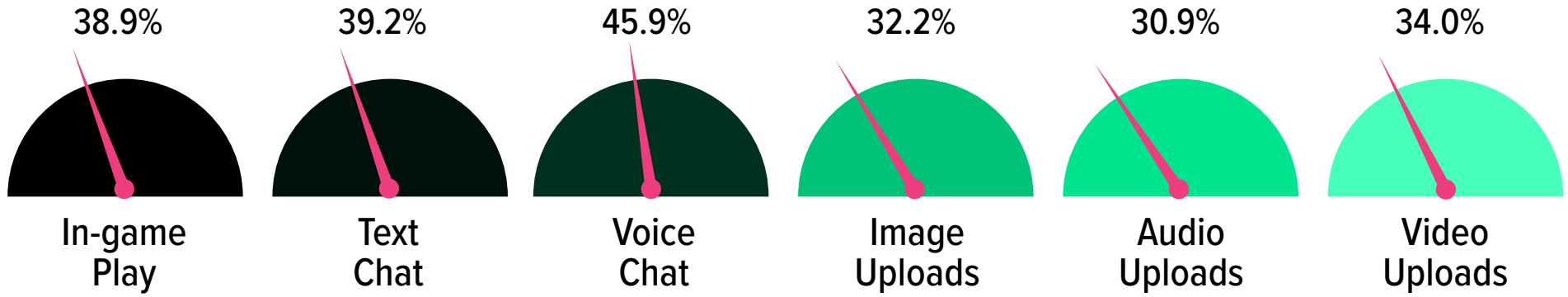
Source: Voicebot 2023



# Voice Chat Leads in Problem Severity

- Voice and text chat along with in-game play are in higher severity cluster receiving the top two most negative sentiment responses by players.
- Voice chat leads all categories with 45.9% in the severe categories.
- The user generated content media categories are also key places where toxic materials appear. The issue was rated as severe by about one-third of gamers.
- The least toxic UGC channel today is audio uploads at 30.9% with video coming in higher at 34.0%.

Significant Toxic Behavior Problems by Game Engagement Channel



Source: Voicebot 2023

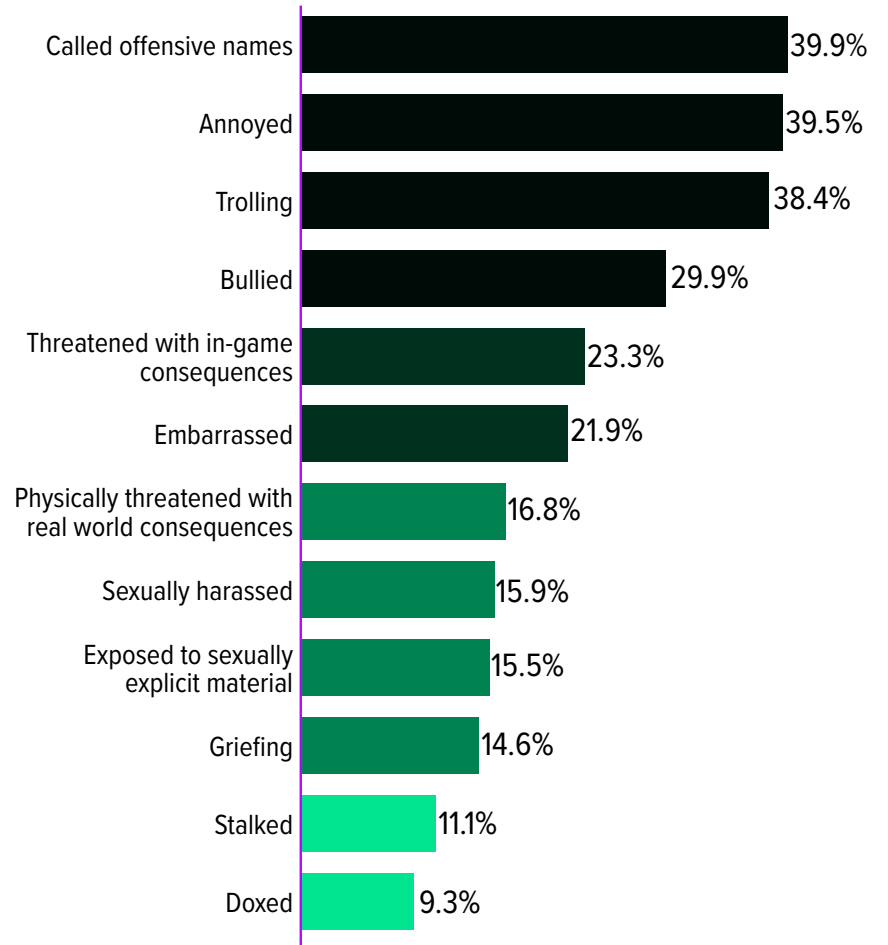




# Toxic Incidents by Category

- Game player data show four tiers of incident types based on frequency of experiences per user.
- The top tier includes “offensive names,” “annoyances,” “trolling” and “bullying.” These were all reported by over 30% of game players in the survey with the top three at nearly 40%.
- “In-game consequences” and “embarrassment” created a second tier representing just above 20% of respondents.
- The next two tiers were less frequent but also included several activities that can rise to the level of criminal activity.
- The data show that a wide range of bad behavior is experienced in voice chat that detracts from the game experience.
- The impact of these incidents often leads to a change in behavior by the victim, which can further detract from the game experience.

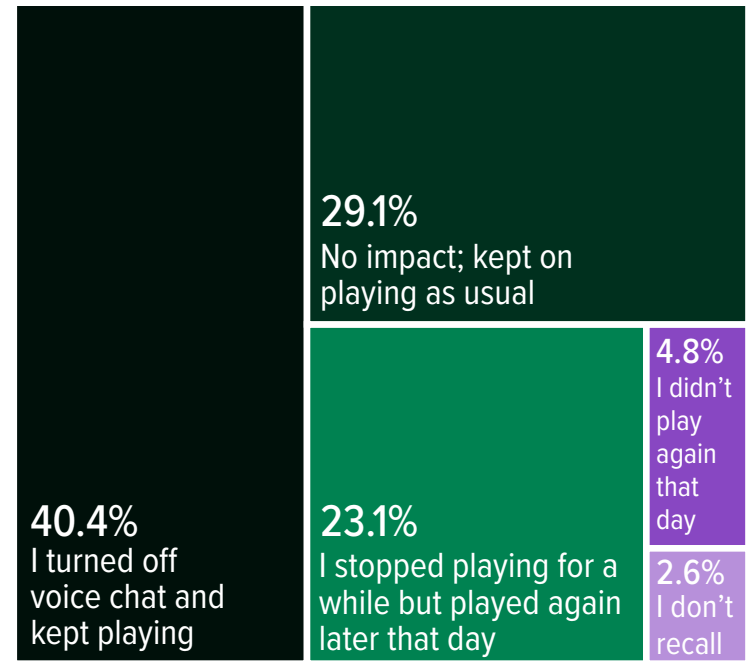
### Voice Chat Toxic Behavior Incidents by Offense Category



# How Toxic Incidents Immediately Effect Game Experience

- Every game maker wants their users to have a great experience all of the time. There are many reasons why a particular game session may not be exceptional but the last thing the game studio wants is for users to reduce their play because of inappropriate actions by other gamers.
- About 28% of toxic incident victims stopped their gameplay that day and one-in-five of those didn't return that day.
- Another 40% turned off voice chat.
- While, about 29% said it didn't impact their game experience, as much as 70% changed their behavior immediately after the incident. This is important given there is often a lag time between an incident and when the report is reviewed.

## Player Behavior Immediately After a Toxic Incident

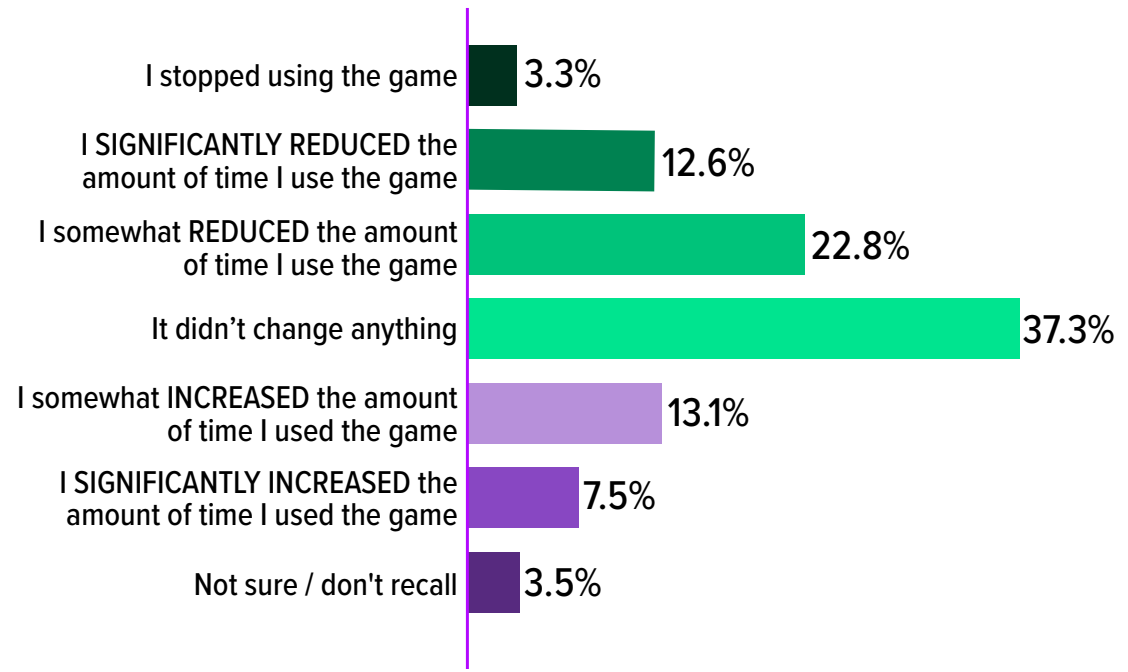


Source: Voicebot 2023



# How Toxic Incidents Effect Game Use Over Time

Player Usage After a Toxic Incident



- Victims of toxic behavior also change their use of games over time. While only 3.3% said they stopped using a game entirely after a toxic incident, another 12.6% said they significantly reduced the amount of time they used the game and 22.8% said there was some reduction.
- That means almost 39% of players reduced their game engagement after an incident. If you assume they didn't reduce their total time playing games, then what happened is they shifted their game playing to other titles.
- Interestingly, 20.6% said they increased their play time after the toxic incident. This increase could be unrelated to the incident or it may be based on a positive experience with the moderation process.



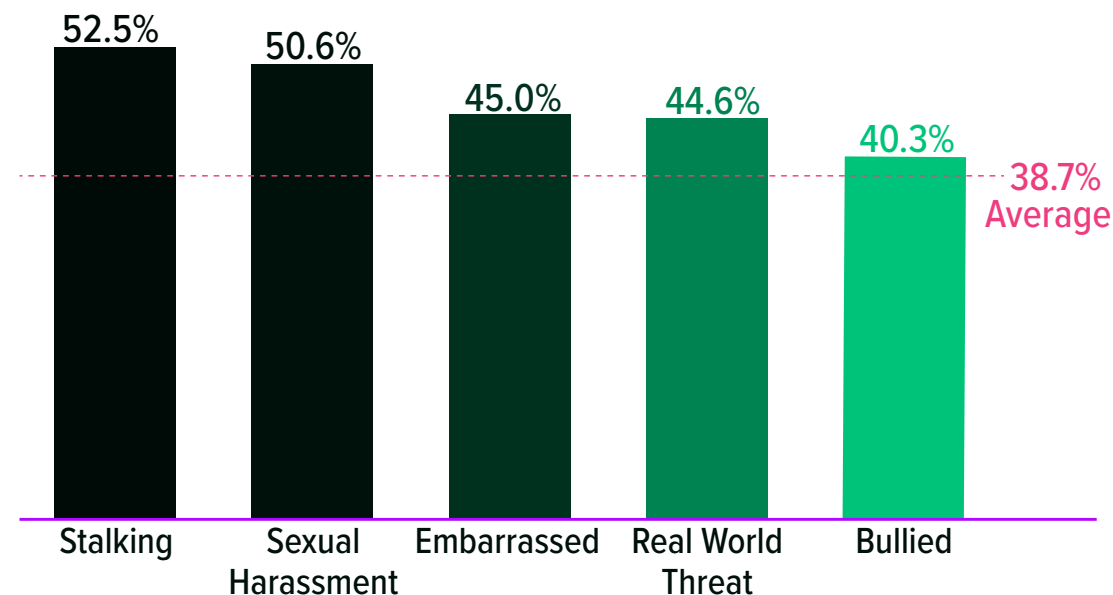
Source: Voicebot 2023



# Stalking and Sexual Harassment Have Significant Impact

- Stalking and sexual harassment incidents are the most likely to reduce play or cause users to quit specific games entirely. More than 50% of victims of these incidents permanently changed their relationship with the game.
- Embarrassment, real world threats, and bullying were next in order at 45.0%, 44.6%, and 40.3% respectively.
- While there is a school of thought in the game industry that suggests all toxic behavior should be treated as equally bad, the data show that the impact on player behavior is not uniform. This finding does not have to drive moderation policy but it is something that game makers should be aware of when incidents occur.

Top 5 Incident Categories Most Likely to Lead to Reduced Play or User Churn



Source: Voicebot 2023

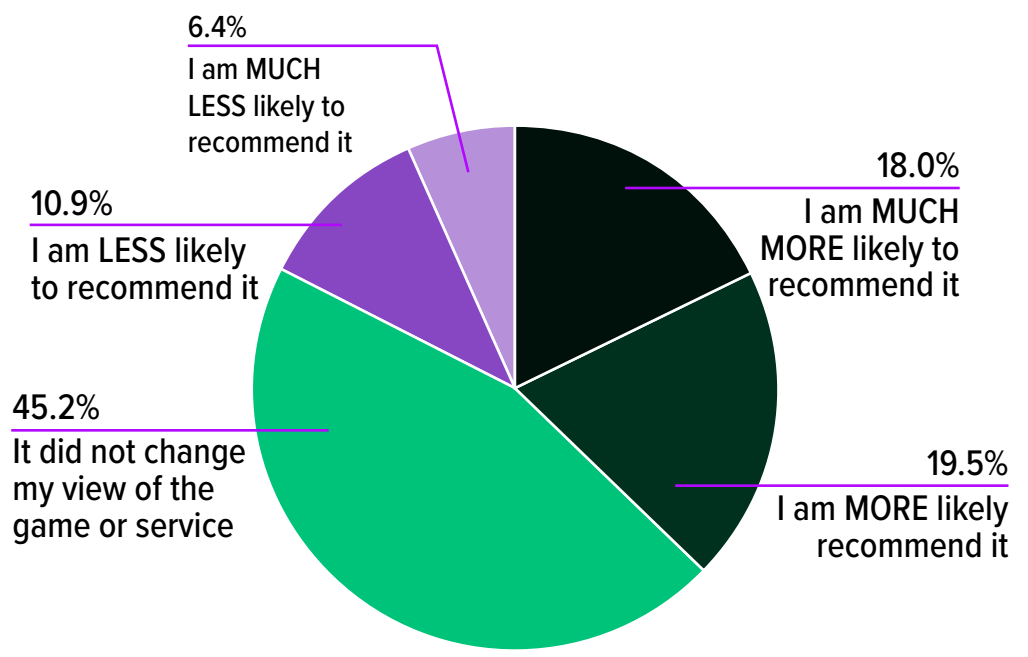






# How Toxic Incidents Effect Perception of Games

## How Toxic Incidents Effect Player Perceptions of Games



- The good news is that only 17.3% of online gamers that have experienced a toxic incident harbor negative feelings about the game because of it. The bad news is that these 17.3% of victims harbor negative sentiment and they are less likely to recommend a game because of bad behavior by another player.
- Most players do separate the other players from the game itself and 45.2% say that the incident did not change their perception of the game.
- A positive signal is that 37.5% of users say they were actually more likely to recommend the game after the incident. The survey did not explore the reasons for this but a logical hypothesis is that the moderation solution improved their impression or there were other unrelated factors. However, this may suggest that moderation steps can be important tools in shaping customer perception and favorable word-of-mouth benefits.



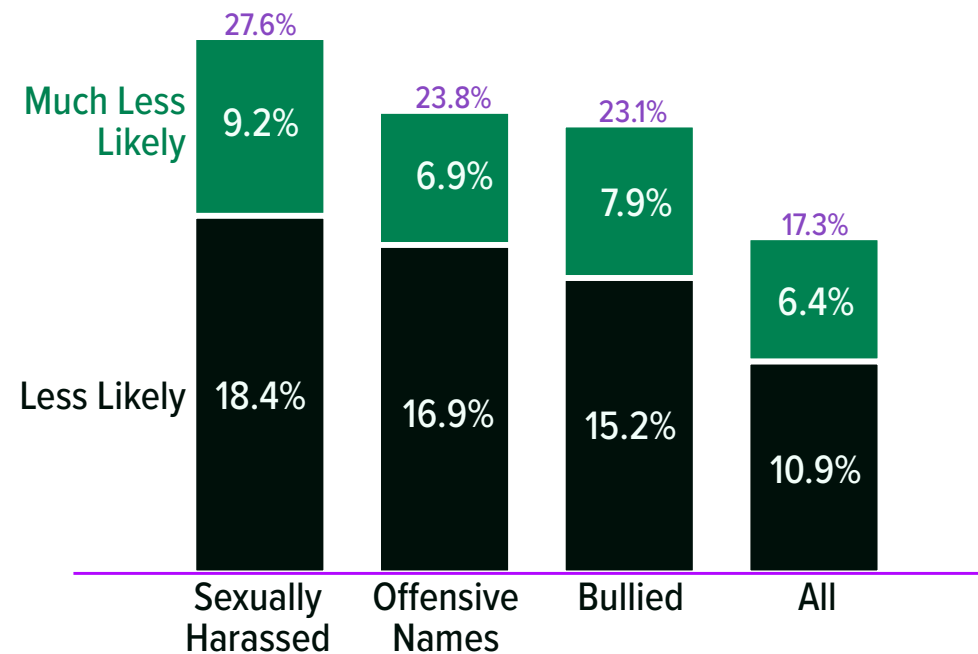
Source: Voicebot 2023



# Sexual Harassment Leads to the Most Negative Sentiment

- Sexual harassment incidents are the most likely to reduce play and negatively impact player sentiment around a game.
- While 17.3% of game players are “less likely” or “much less likely” to recommend a game after experiencing a toxic incident of any kind, the figure is 27.6% for sexual harassment. This means, that players are about 50% more likely to harbor negative sentiment toward a game after a sexual harassment incident in voice chat. Even more concerning is they are “much less likely” to recommend a game at a 69% rate.
- Being subjected to offensive names is the second highest category followed by bullying in terms reducing player likelihood to recommend a game.

Incident Categories That Generate The Most Negative Perception of Games



Source: Voicebot 2023



# Voice Chat Moderation Experience

## Moderation is Reactive, Audit-based, and Inconsistent

The survey and our discussions with trust and safety industry professionals suggest that almost all voice chat moderation is reactive and audit-based. That means, the trigger for doing something about a toxic incident is the victim filing a report of some kind. Some games make this easy with in-game buttons and single click submissions. Others require you to go to their website and fill out a form.

This means that game makers have no knowledge of toxic behavior until a user submits a complaint. Given that just over one-third of players that have experienced a toxic incident say they have submitted a complaint, a lot of bad behavior is never identified. Consider also that even gamers who have issued a complaint, don't do it for every incident. While everyone knows a reactive model slows issue resolution, it is important to note that it also reduces visibility into the scope of the problem.

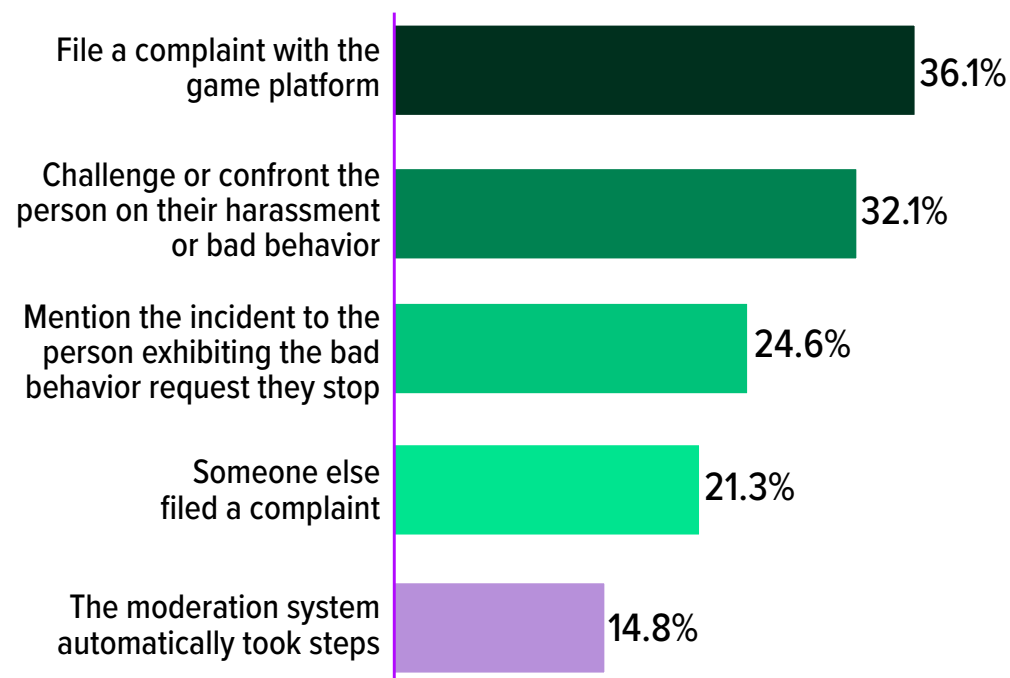
The audit-based approach is also problematic because moderators often have so little data to support their investigation. One game maker told us that, depending on the category of offense, only between 10% and 25% of the submitted complaints result in some sort of guilty verdict. This company can say that with confidence because they have audio recordings of every voice chat and listen to them every time a complaint is submitted.

This is particularly troubling because over half of toxic behavior victims say they have been unjustly reported. If the investigation does not have audio and must rely solely on the claims of the person issuing the complaint, you can see how unjust outcomes are bound to arise. The other issue is time. For the justified complaints, the investigation process can often lead to a significant delay between the incident and action.



# What Happens After a Toxic Incident

## Actions Taken by Victims of Toxic Behavior

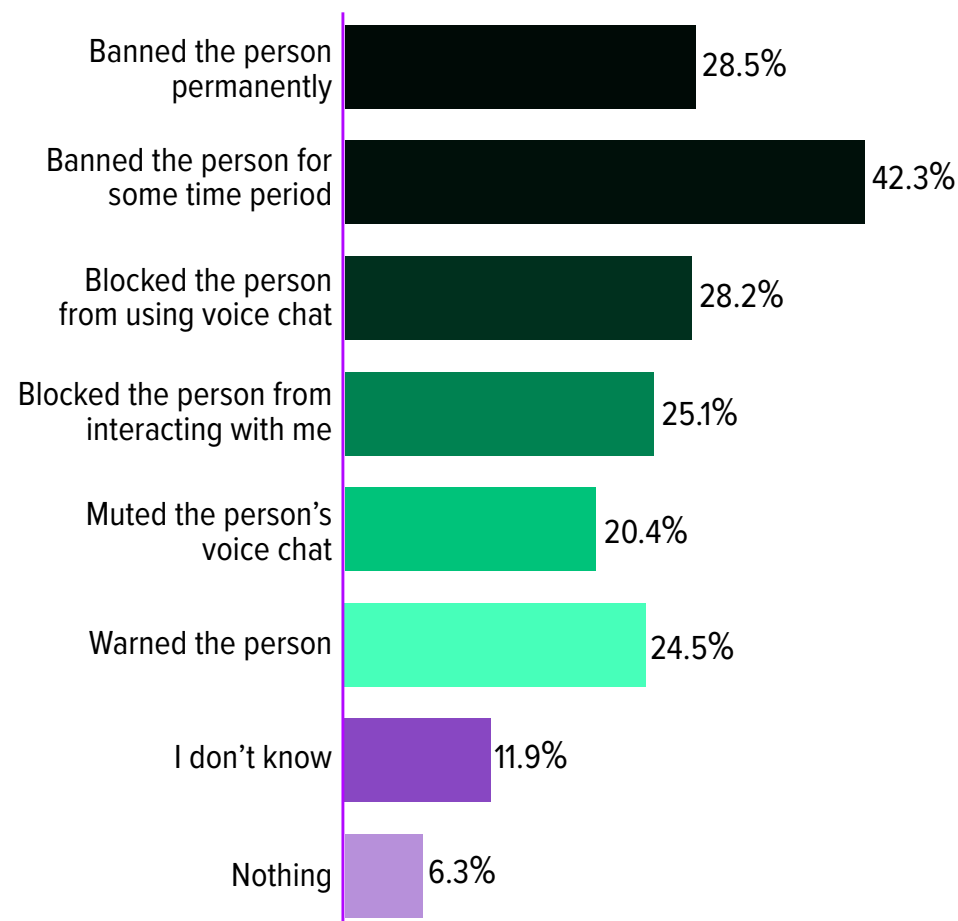


- Only 36% of victims say they have filed a complaint with the game about another player after a toxic incident. This is an important statistic to consider. This means nearly two-thirds of victims do not report incidents at all.
- Even when the 21% of incidents are reported by another player and you consider instances where both occur, you are looking at more than half of incidents going unreported and likely far more. Of course, even users that have filed a complaint at one time have not necessarily done so for every incident. The unreported incidents far exceed those that are.
- Less than 15% of victims said the game platform took moderation steps proactively. Reactive moderation is the dominant approach taken by game makers. It is up to gamers to report incidents. If an incident goes unreported, the game makers don't know it occurred.

## Moderation Response by Games

- Game makers have a variety of steps they can take in response to toxic behavior. These rank from permanently banning a player from the game to issuing a warning or doing nothing. Based on game player responses, it appears the most common results is a temporary ban of the perpetrator.
- You might think that warnings would be the most common response, but we already discovered that at least half (and likely far more) of these incidents are never reported. That means it is also probable the more egregious toxic behavior incidents are reported with higher frequency and therefore more severe sanctions are levied at a higher rate.
- Some of this may also be explained by the lack of tools at the disposal of moderators. Nearly every game enables you to freeze or delete an account. They do not necessarily have the means to take less drastic steps short of a warning.
- Another surprising finding is that the victims appear to know the moderation results with high frequency.

Post Incident Action Taken by Game Moderators



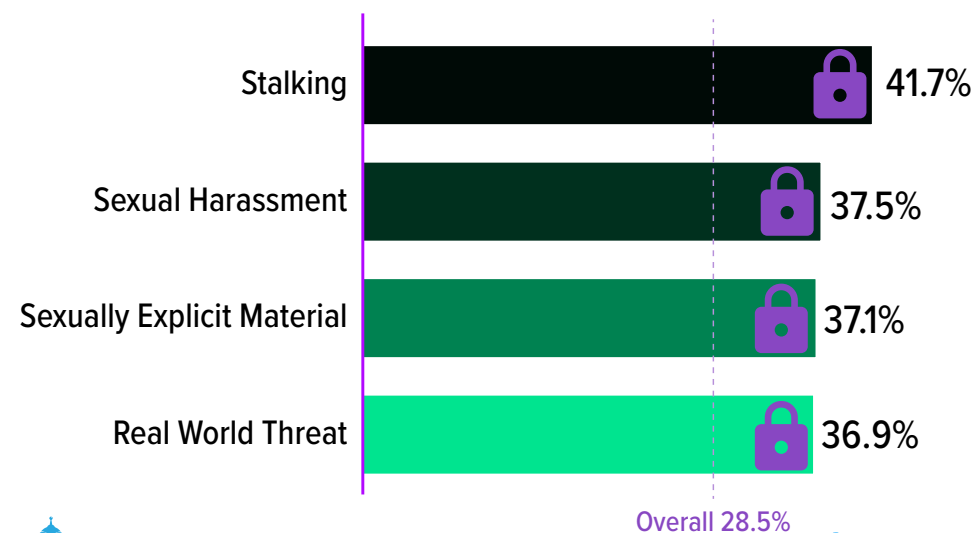
Source: Voicebot 2023



# Permanent Bans Are Most Common for Stalking and Sex

- The penalties issued by game moderators differ by the offense category. Players that engage in stalking behavior are the more likely to receive a permanent ban than other offenses. While the overall rate for reported incidents receiving a permanent ban is as high as 28.5%, stalking receives this penalty at a rate of 41.7%.
- Next in line are sexual harassment and discussing sexually explicit topics. Both have a permanent ban rate of over 37%.
- Real world threats are also taken seriously by game moderators and receive permanent bans at a rate of 36.9%.

## Incident Categories Most Likely to Result in a Permanent Ban



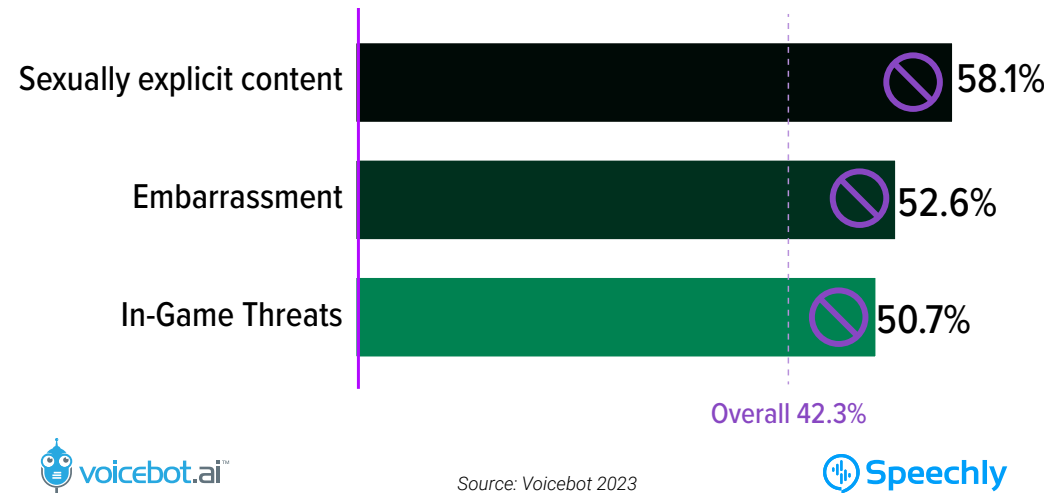
Source: Voicebot 2023





## Temporary Bans Common for Sexually Explicit Material

### Incident Categories Most Likely to Result in a Temporary Ban



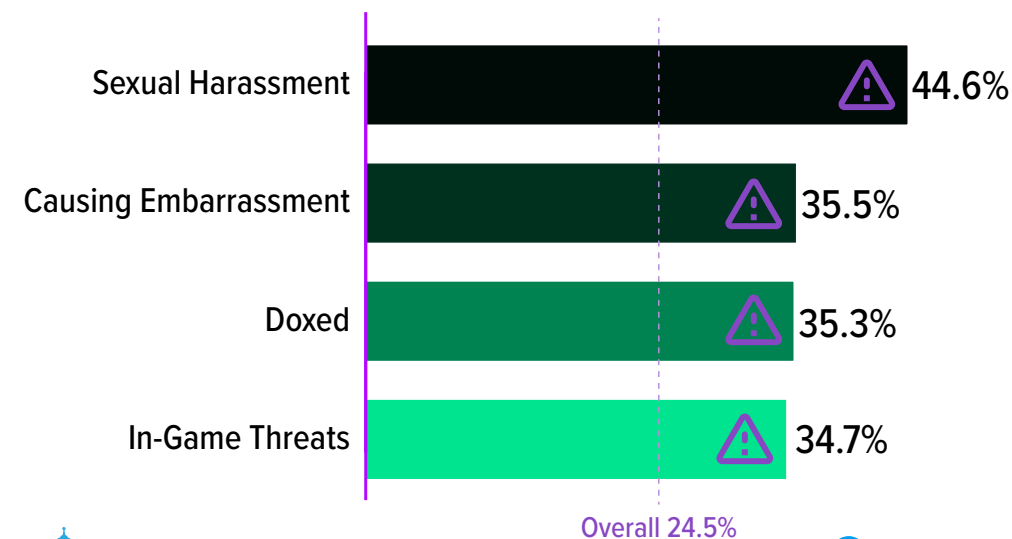
- Temporary bans were the most commonly cited penalties for toxic players according to victims of the bad behavior. In this category, sharing sexually explicit content or discussing these topics led to temporary bans at a much higher rate than other offenses.
- Intentionally embarrassing other players and in-game threats were the next most likely with all of the top three exceeding a 50% incidence rate.
- These data begin to offer a sense about how game moderators adjudicate incidents. While some games in the industry have insisted that all offenses should be treated as equally bad, most games have policies that clearly differentiate penalties based on the incident category.



# Warnings Common for a Variety of Behaviors

- Sexual harassment is the most common offense to receive warnings from game moderators. It is interesting that this category receives permanent bans at the second highest rate and warnings at the highest rate. This also ranks highly for blocking perpetrators from interacting with their victims in the future.
- Causing embarrassment, doxing, and in-game threats were all above average categories for receiving warnings.
- Again, we see that game moderators either implicitly or explicitly levy penalties at different rates for different categories of toxic behavior.

## Incident Categories Most Likely to Result in a Warning



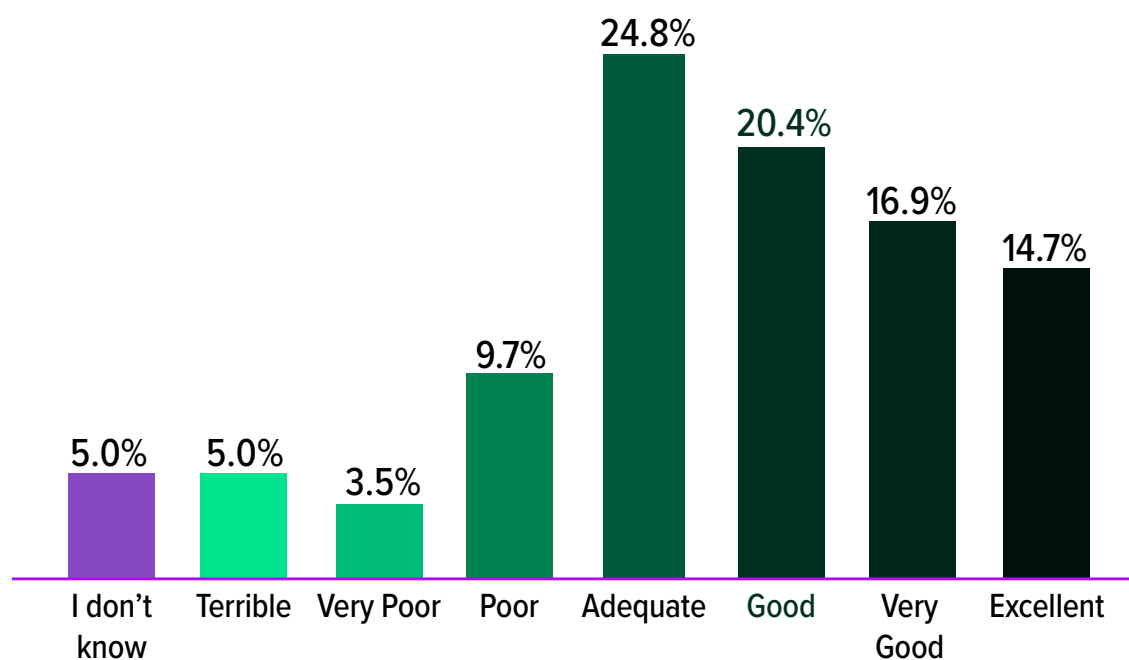
Source: Voicebot 2023





## How Victims View Game Moderation Actions

### Victim Perception of Moderation Outcome



Source: Voicebot 2023

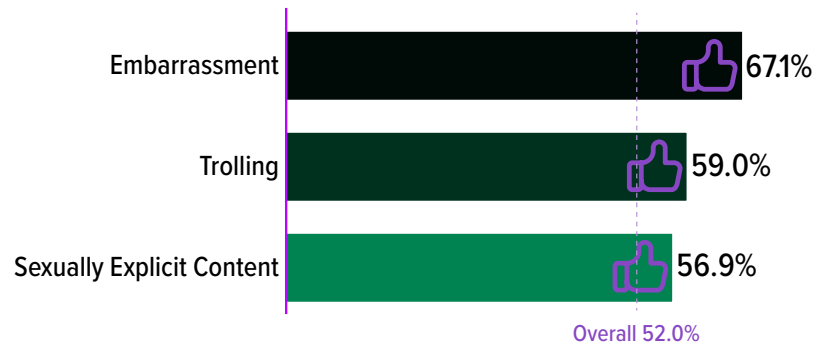


- About one-quarter of the victims of toxic behavior believe the game moderation penalties were adequate, and over 50% viewed them favorably.
- Less than 20% of victims suggested the actions by game moderators were “poor,” “very poor,” or “terrible.”
- These responses suggest that victims of toxic behavior are generally satisfied with the types of penalties levied against the perpetrators by game moderators. At least this is true when the incidents are reported and the players are aware of the consequences.
- However, with nearly one-in-four toxic behavior victims dissatisfied with the moderation approach, you can see why the reduced play and negative sentiment manifests and may grow over time.

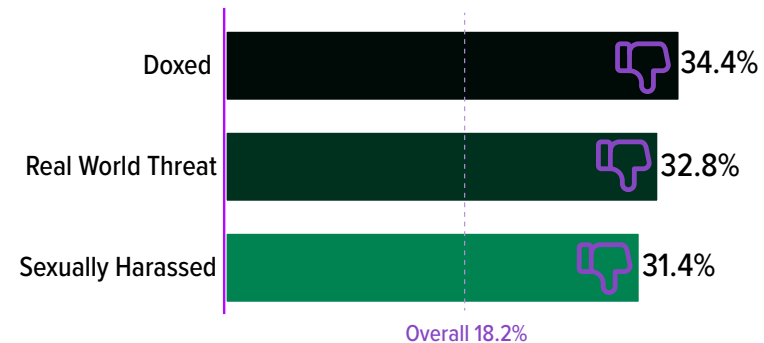
# Moderation Sentiment Influenced by Offense Type

- Game players that were victims of embarrassing situations, trolling, or being exposed to sexually explicit content were the most likely to rate the moderation responses positively.
- On the other side of the sentiment divide, players that were doxed, subjected to a real world threat, or sexually harassed, were most likely to rate the moderation response negatively.

Incident Categories Where Victims Are Most Likely to Rate Moderation Positively



Incident Categories Where Victims Are Most Likely to Rate Moderation Negatively



Source: Voicebot 2023



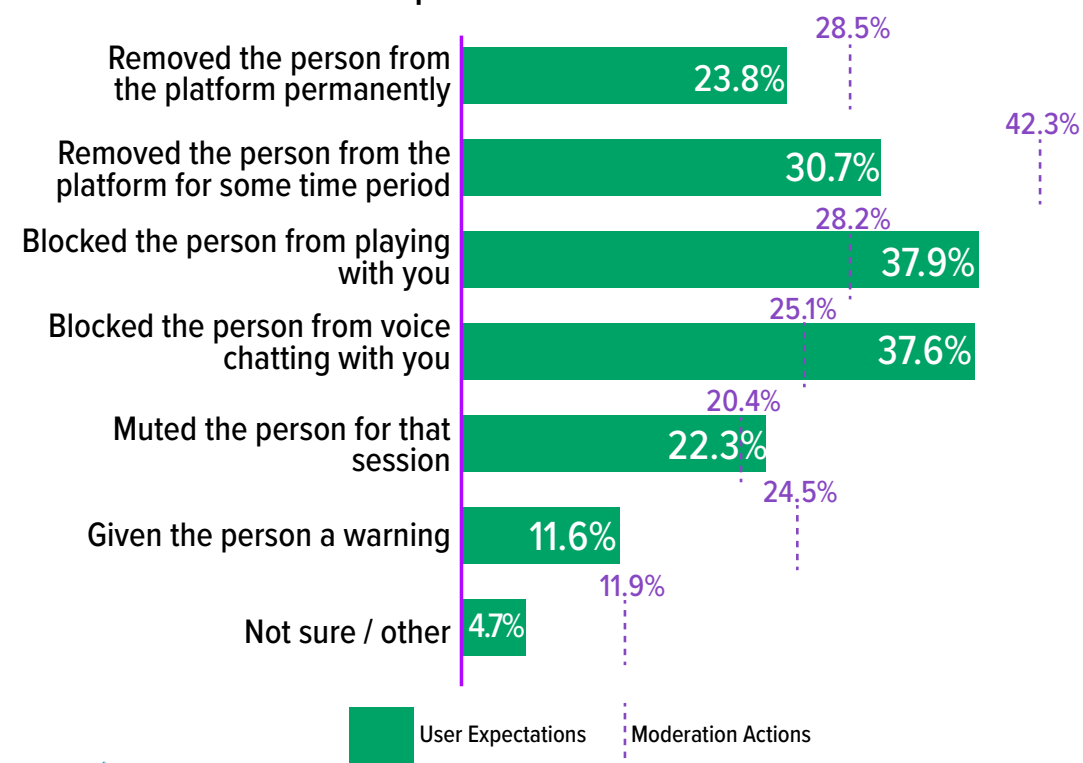
Source: Voicebot 2023



# How Well Moderation Penalties Meet Player Expectations

- After a toxic behavior incident is assessed and a penalty imposed, there is always the question about how that action is perceived by the victim. Interestingly, it appears that game moderators are more likely to impose the most severe penalties (permanent and temporary bans from playing) than the victims. Temporary bans are, by far, the most frequently imposed penalties by moderators.
- Only 23.8% of victims would have imposed a permanent ban while 28.5% say it was the moderator-imposed penalty. The figures were 30.7% and 42.8%, respectively, for temporary bans.
- Victims would be more likely to impose penalties such as blocking the other player from gameplay together, or blocking them from voice chat.
- Game moderators are also far more likely to issue a warning than the victims typically expect.

## How User Moderation Expectations Compare to Outcomes



Source: Voicebot 2023

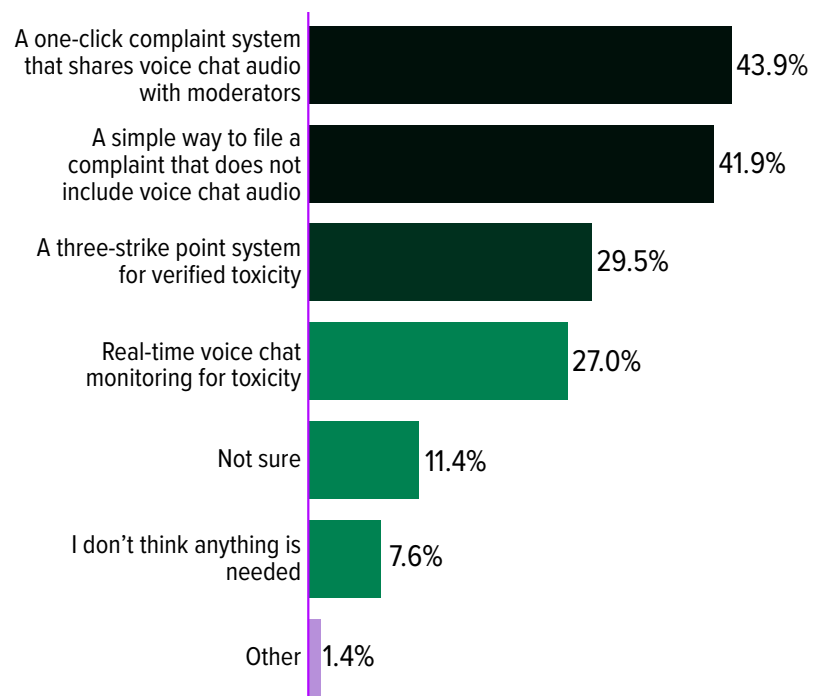


KEEP OUT



# Players Want Convenience for Filing Complaints

## What Gamers Want for Voice Chat Moderation



Source: Voicebot 2023

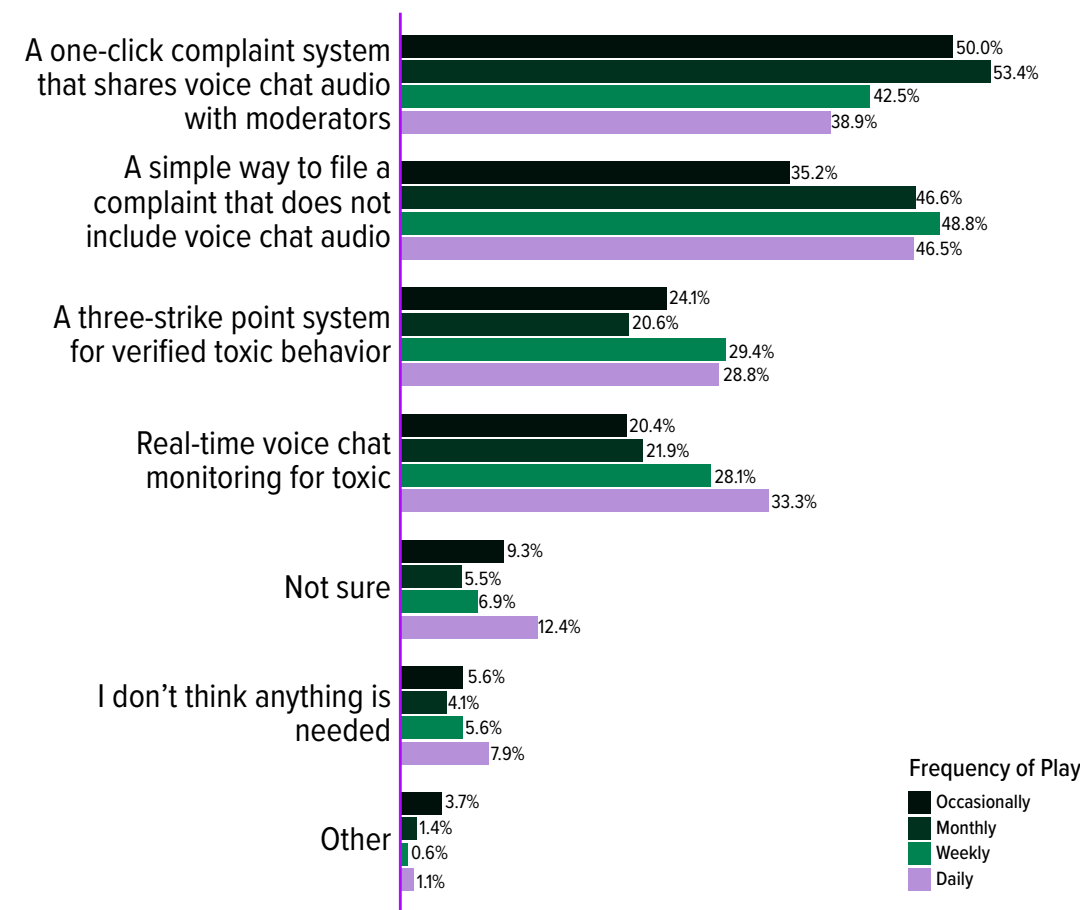


- When asked what features they would appreciate to support voice chat moderation, game players focus on easy ways to file a complaint and validate the offensive behavior. The top request is for a one-click complaint system that automatically shares the offending voice chat audio with moderators. Close behind this in terms of preference is a simple way to file a complaint without an audio file.
- Victims of toxic behavior in voice chat also like the idea of a three-strike system that would impose more severe consequences for repeat offenders. Granted, the high rate of false accusations suggests this approach could be risky unless game makers have better data to investigate claims.
- Finally, about 30% of in-game toxic behavior victims would like games to implement real-time voice chat monitoring for toxic incidents.

# Avid Gamers Support Real-time Voice Chat Monitoring

- One-third of daily active players say they would like to see games implement real-time voice chat monitoring. They were followed by weekly and monthly active players. This suggests that high frequency game players understand the magnitude of toxic behavior in voice chat and the importance of having an automated system to complement complaint-driven processes.
- These high frequency players were also first and second in their interest in three-strike policies for repeat offenders.
- Monthly active and occasional players were first and second in expressing interest for one-click complaints systems.
- Game players overall believe toxic behavior in voice chat is a problem and want an easy method of incident reporting. The most frequent players agree but are also most likely to be victims of false reports so they would like the game maker to control the process.

### Interest in Real-Time Voice Chat Monitoring by Gamer Frequency of Play



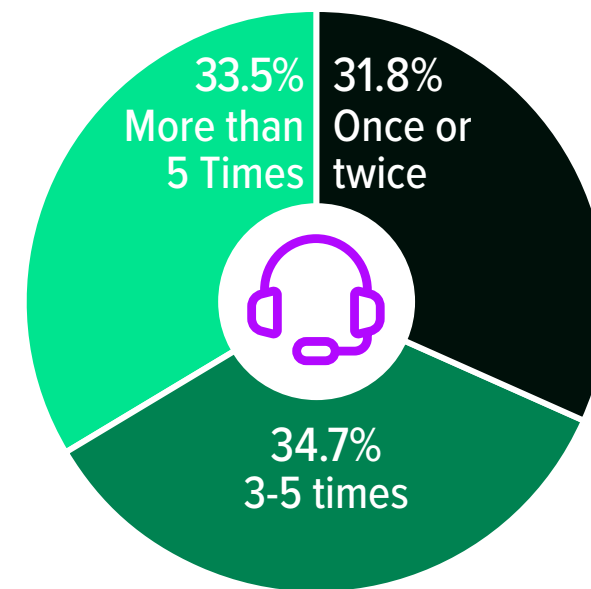
Source: Voicebot 2023



## False Accusations Often Occur Multiple Times

- Game players indicate that the incidence of false accusations is not typically a one-time occurrence. Over two-thirds say they've been falsely accused of toxic incidents three or more times, and more one-third say it has happened more than five times. You can imagine a situation where a player preemptively accuses another player of toxic behavior in the hope of obscuring their own culpability.
- The implication for game makers is they must be prepared to successfully investigate these incidents. Otherwise, the victims of toxic behavior may unjustly be punished. The only way to do this is to ensure moderation teams have tools to assess what actually occurred so they can make accurate and fair judgment.
- Also note how this might be impacted by a three-strike system. If false accusations occur at a rate exceeding three times, an innocent player may be unjustly banned.

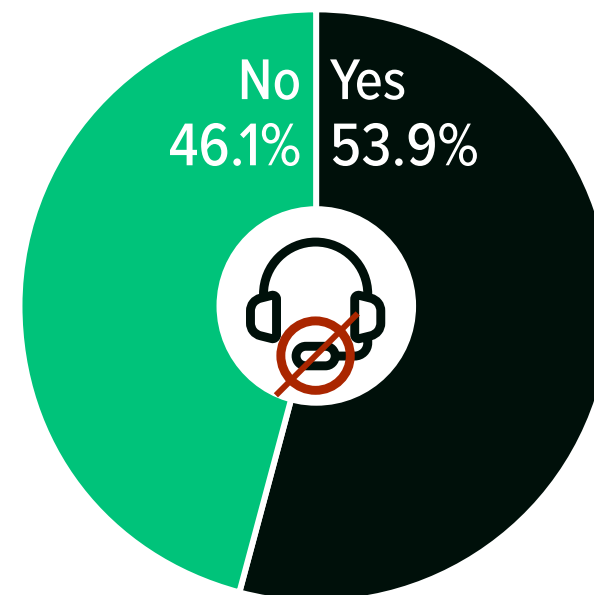
### Frequency of Reported False Accusations of Toxic Behavior in Voice Chat



# Many Users Complain About False Accusations

- It is also important to note that a lot of game players say that complaints are not always justified. Over half of voice chat users say they have been falsely accused of toxic behavior by their fellow players.
- This doesn't mean that half of accusations are contested. It means that half of voice chat users believe they have been falsely accused at least once. It is an important finding.
- There is some evidence that most toxic behavior is perpetrated by a few serial offenders. There is also an understanding that many game players do cross the line into bad behavior in the heat of competition at some point, but it is an aberration of an otherwise record of positive play. Moderation policies and tools should consider how to determine when this occurs.

## Voice Chat Users Reporting False Accusations of Toxic Behavior



Source: Voicebot 2023





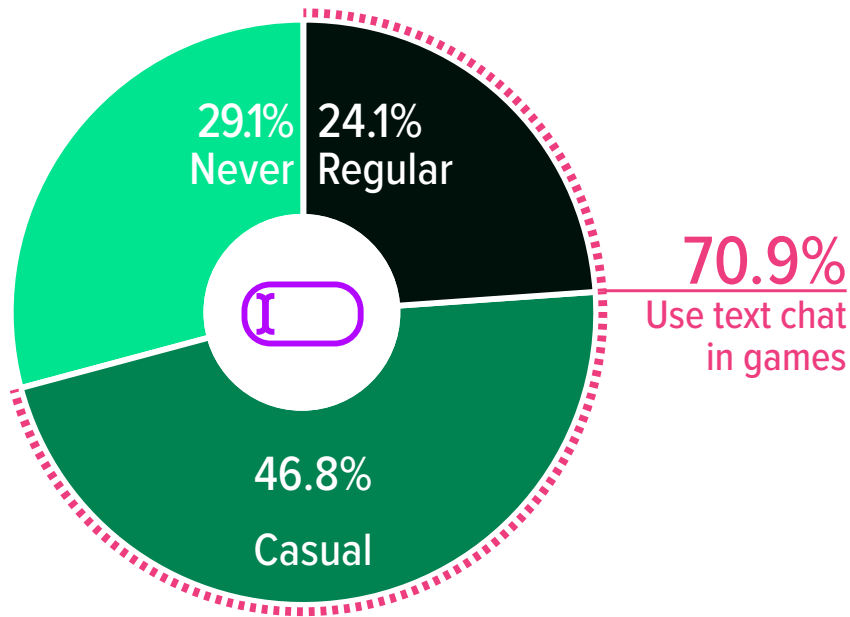


# Text Chat Toxicity

# Text Chat Use is Common

- Text chat is used at a slightly higher rate than voice chat at 70.9%. This is due in part to broader availability.
- Just over 24% of players said they were regular users of text chat in games while another 47% said they used the feature at least some of the time.
- Just under 30% of players said they never use text chat while playing.
- Voice chat users are more likely to identify as regular users that for text chat. Nearly 36% use voice chat with high frequency compared to just 24% for text chat. This suggests voice chat is more integrated into the typical game experience than text.

Gamer Text Chat Experience



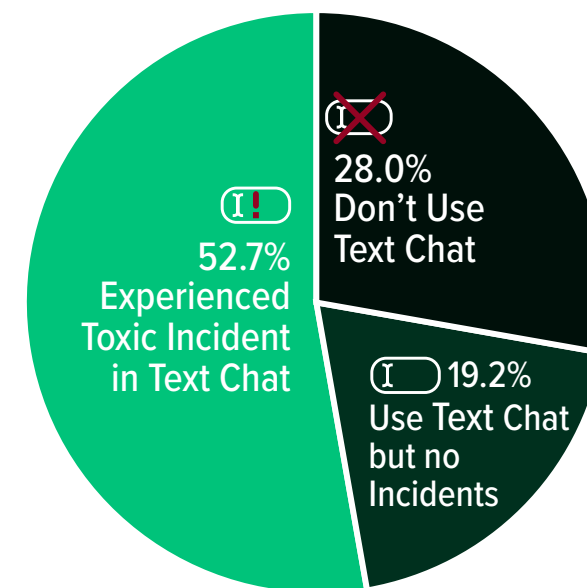
Source: Voicebot 2023



# Reach of Text Chat Toxicity

- More than half of all gamers have experienced a toxic incident through text chat. Of all in-game text chat users 73% have experienced a toxic behavior incident. .
- The number of toxic incidents per text chat user is 2.5. That figure is 35% below voice chat but reinforces the fact that victims of these incidents are typically experiencing them multiple times.
- Industry professionals tell us that a factor affecting text chat more than voice channels is spam. This is often problematic in free-to-play games where users post links to drive purchases or commit fraud.
- Game makers typically have text chat moderation tools to automatically scrub offensive terms from chat which may mitigate incident rates.

## Gamer Experience With Toxic Behavior in Text Chat



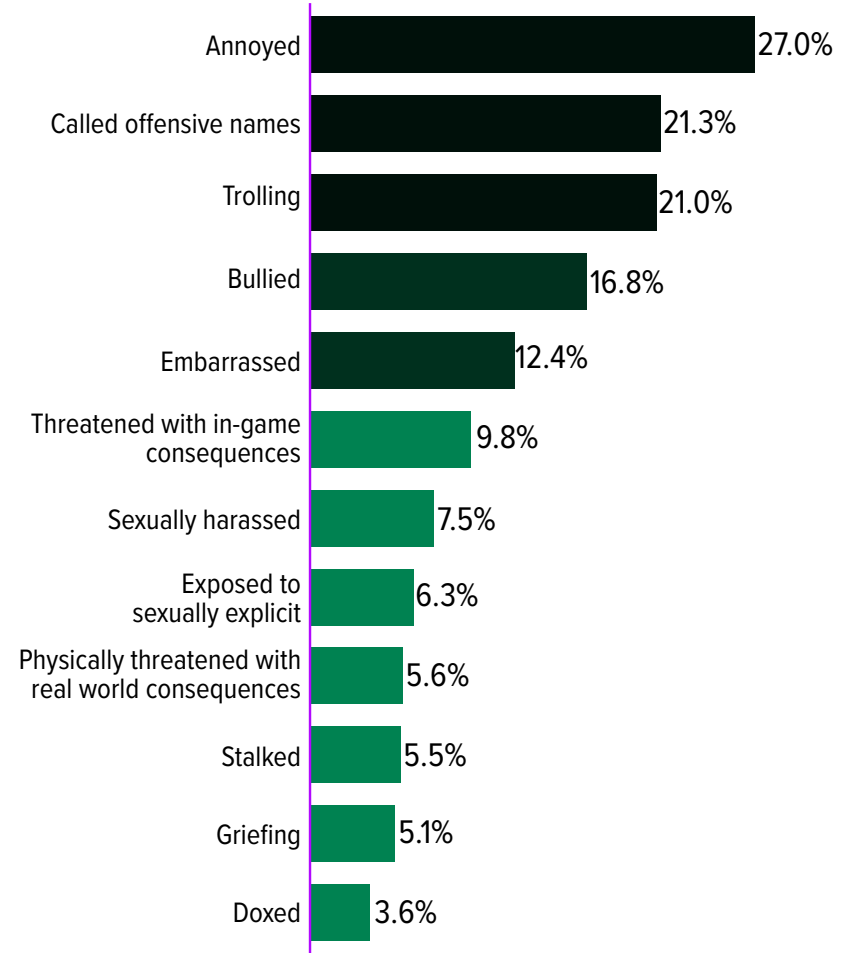
Source: Voicebot 2023



## Toxicity in Text Chat

- Game players say the most frequent form of toxic behavior in text chat is being annoying. Game makers tell us that free to play titles that have active text chat engagement are also very susceptible to spam. Given that, the high response rate for “annoying” is logical.
- That is followed by being called offensive names, trolling, and bullying. These are all behaviors we commonly see in other text-based social communications channels so games don’t look much different than the wider digital world.
- You might also notice that more serious types of toxic behavior, particularly those that may venture into crimes, are the least frequently cited. This also is not surprising. A perpetrator seeing the words on a screen around these topics may hesitate before sending, but would have no such filter for spoken communications.

**Text Chat Toxic Behavior Incidents by Offense Category**



Source: Voicebot 2023

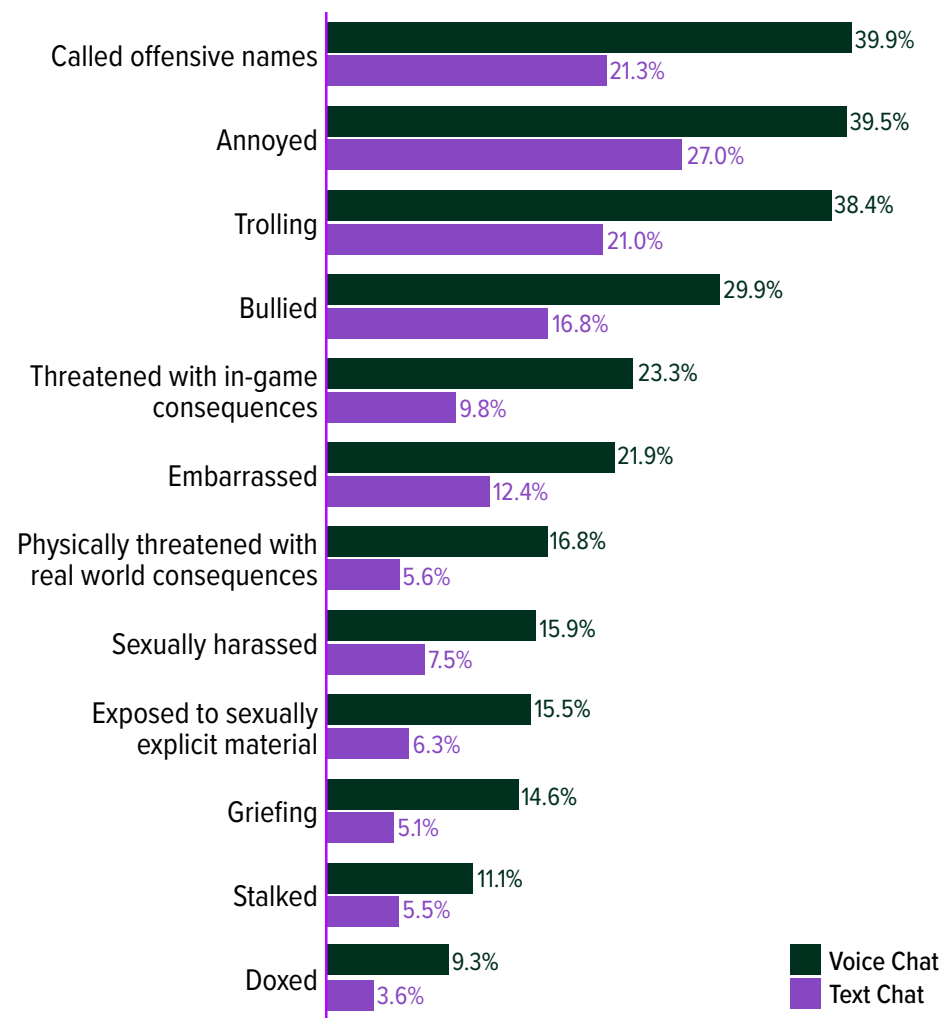




## Voice and Text Chat Toxicity

- You will notice that every toxic behavior category is cited with higher frequency in voice chat than in text chat. It appears that you are between 50% and 100% more likely to encounter any of the categories of toxic behavior in voice chat.
- The reason for this disparity could be simply because voice chat is real-time and there is less self-filtering by game players. By contrast, when writing out a message, you can pull back on making the comment before hitting enter. There is no enter button for voice chat.
- It also may be because tools for real-time text chat monitoring are common while they are rare for voice chat. This may be an area where game makers need to pay more attention given the higher frequency of incidents and rating by game players that voice chat is the most toxic channel for in-game communication.

### Voice and Text Chat Toxic Behavior Online Gamers Experience



Source: Voicebot 2023





# Additional Resources

## Voice Chat Moderation

Speechly provides superfast speech recognition – on device, on premise, or in the cloud. Our easily customizable models can be deployed for speech recognition only or with a fine-tuned NLU and deliver industry leading accuracy, privacy, and cost efficiency. Born from AI research in the Nordics on some of the most complex global languages, Speechly is used by leading online games and metaverse virtual worlds for proactive voice chat monitoring and moderation, while both startups and large enterprises use our solutions for operating voice user interfaces for websites, applications, and products.

To see some demonstrations of our voice chat moderation and transcription solutions, click the button below.

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Voicebot.ai is the leading research firm tracking the rise and evolution of voice assistants conversational AI technologies, synthetic media, and generative AI. In addition, we are the largest provider of voice AI, news and commentary, which offers us unique access to information and industry contacts. The team also has extensive cross industries and how AI technologies can impact competitive and operational dynamics.

These capabilities together support a robust set of advisory services for voice AI across other industries. If you are looking to engage the most experienced team in voice AI to help with your project, strategy, or market research, please click the button below and let us know how we can help.

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