

Twitch Users' Motivations and Practices During Community Mental Health Discussions

JIRASSAYA UTTARAPONG, New Jersey Institute of Technology, USA

NINA LAMASTRA, New Jersey Institute of Technology, USA

REESHA GANDHI, New Jersey Institute of Technology, USA

YU-HAO LEE, University of Florida, USA

CHIEN WEN (TINA) YUAN, National Taiwan Normal University, Taiwan

DONGHEE YVETTE WOHN, New Jersey Institute of Technology, USA

Live streaming is a form of media that allows streamers to directly interact with their audience. Previous research has explored mental health, Twitch.tv and live streaming platforms, and users' social motivations behind watching live streams separately. However, few have explored how these all intertwine in conversations involving intimate, self-disclosing topics, such as mental health. Live streams are unique in that they are largely masspersonal in nature; streamers broadcast themselves to mostly unknown viewers, but may choose to interact with them in a personal way. This study aims to understand users' motivations, preferences, and habits behind participating in mental health discussions on live streams. We interviewed 25 Twitch viewers about the streamers they watch, how they interact in mental health discussions, and how they believe streamers should discuss mental health on live streams. Our findings are contextualized in the dynamics in which these discussions occur. Overall, we found that the innate design of the Twitch platform promotes a user-hierarchy in the ecosystem of streamers and their communities, which may affect how mental health is discussed.

CCS Concepts: • **Human-centered computing** → **Human computer interaction (HCI)**.

Additional Key Words and Phrases: live streaming; Twitch; mental health; online communities; interviews; self-disclosure

ACM Reference Format:

Jirassaya Uttarapong, Nina LaMastra, Reesha Gandhi, Yu-hao Lee, Chien Wen (Tina) Yuan, and Donghee Yvette Wohn. 2022. Twitch Users' Motivations and Practices During Community Mental Health Discussions. *Proc. ACM Hum.-Comput. Interact.* 6, GROUP, Article 5 (January 2022), 23 pages. <https://doi.org/10.1145/3492824>

1 INTRODUCTION

Mental health discussions take place throughout various social media platforms. Having these discussions in public social media contexts can help reduce negative stigma towards many different mental health issues, such as depression, anxiety and suicidal ideation [13]. Live streaming, particularly on the dominant live streaming platform, Twitch.tv, is a relatively new context in which

Authors' addresses: Jirassaya Uttarapong, New Jersey Institute of Technology, Newark, New Jersey, USA, 07102, ju35@njit.edu; Nina LaMastra, New Jersey Institute of Technology, Newark, New Jersey, USA, 07102, agl24@njit.edu; Reesha Gandhi, New Jersey Institute of Technology, Newark, New Jersey, USA, 07102, rg559@njit.edu; Yu-hao Lee, University of Florida, Gainesville, Florida, USA, 32611, leeyuhao@jou.ufl.edu; Chien Wen (Tina) Yuan, National Taiwan Normal University, Taipei City, Taiwan, tinachienwenyuan@gmail.com; Donghee Yvette Wohn, New Jersey Institute of Technology, Newark, New Jersey, USA, 07102, wohn@njit.edu.

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for components of this work owned by others than ACM must be honored. Abstracting with credit is permitted. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee. Request permissions from permissions@acm.org.

© 2022 Association for Computing Machinery.

2573-0142/2022/January-ART5 \$15.00

<https://doi.org/10.1145/3492824>

this phenomenon occurs. Streamers, or content creators on Twitch, create channels that eventually form communities centered around streamers' personas and brands. As building a personalized community is a crucial part of streaming on Twitch, streamers make it a point to engage with their viewers. It is important to note that such interactions tend to be masspersonal, where the streamer broadcasts to their community of mostly unknown followers [30]. The masspersonal nature of conversations on live streams therefore affects the way viewers interact with one another and the streamer [17, 30], especially when discussing personal topics [9]. Self-disclosure on social media may invite others to provide social support [28], help people connect with each other [35], and increase the authenticity of those who self-disclosed [25, 34]. We further examine self-disclosure on live streams to better understand how it factors into the user-hierarchy of the Twitch platform and influences mental health discussions.

With in-depth interviews ($n = 25$), this study aims to explore, in the context of mental health discussions on Twitch, viewers' motivations behind participating in them, viewers' preferences for how streamers' facilitate them, and how the community as a whole participates in them. By understanding how mental health conversations are facilitated and why people partake in them, platforms such as Twitch can better foster safe and closer-knit communities. This may ultimately help streamers better connect to their audiences and will further literature on how informal education on stigmatized issues occur and are handled.

2 LITERATURE REVIEW

2.1 Mental Health in Social Media

For millions of people around the world, social media is a place not only for building and maintaining relationships but also for expressing their identity and obtaining information about the world. Social media use continues to grow, and so do concerns over the potential adverse effects of social media on its users' social relationships and mental health. One primary concern is that social media interactions may be replacing actual social connections, leading to loneliness and depression [26]. Despite such concerns, empirical evidence examining the relationship between social media use and mental health has shown mixed results. Scholars today have begun to acknowledge that the inconsistent findings may be due to the different affordances of the social media studied and usage behaviors [7, 44]. Social media can be harmful to one's mental health when it is used passively as an escape or when used to make negative social comparisons. However, when social media affords self-disclosure and community building, it can facilitate social networks that provides social support to reduce loneliness and improve well-being.

Scholars have identified several social media affordances that support self-disclosure and relationship-building [38]. The first affordance is anonymity; it promotes self-disclosure by allowing individuals to express themselves without fear of embarrassment, stigmas, or social repercussions [39]. On the other hand, anonymity can also hinder self-disclosure since it limits an individual's ability for expressing their individuality, resulting in more conformity to the group norms [33]. The second social media affordance that supports relationship-building is visibility. Social media allows people to easily see information disclosed by other people through their posts, comments, likes, and emojis. Visibility of information can shape a norm of sharing and invite others to disclose information [13]. Finally, social media that affords persistent associations can support stronger relationships [41]. Persistence allows users to build expectations and relationships over time, persistence of information also allow newcomers to catch-up on past interactions, which helps them understand the history of the interactions. Social media can support persistent associations through features such as friending or following [24], and system aggregated cues that signal the size of the community and networks.

2.2 Live Streaming/Twitch as a type of social media

One of the most popular live streaming platforms, Twitch.tv, caters to a variety of streamers and viewers, primarily in, but not exclusive to, the gaming community. Twitch brings in approximately 140 million unique visitors every month, with an average of 127,000 live Twitch broadcasts occurring at any given time [8]. Here, people often learn from professional esports textcoloredgame play [3] and are entertained by game play and communities of like-minded people [10]. Outside of game play, streamers also host open conversations with viewers, as well as creative activities such as art and music [31]. During broadcasts, Twitch employs human moderators that handle content that have been flagged as inappropriate by users. However, in the scope of a live stream, streamers may moderate themselves, bring on other human moderators, and utilize Twitch's AutoMod that uses algorithms to filter spam and offensive language in chat messages. On top of AutoMod, many streamers also choose to use third-party bots to filter language, as some are more customizable to streamers' preferences [4, 42].

Live streaming is a unique social media context in which mental health conversations occur [22]. It differs from other social media and streaming services, like YouTube, TikTok, Instagram, and television, in that it facilitates synchronous social interaction and real-time information sharing of chat messages, video, and audio between streamers and viewers [4, 18, 42]. While other platforms may provide live streaming options for content creators, it is not the primary feature of the platforms as it is with Twitch. Live streams generally do not have mental health as their main focus, but both streamers and viewers may spontaneously discuss it during a broadcast [14].

There is an imbalanced dynamic between viewers and streamers on live streaming platforms like Twitch. Viewers often are confined to the boxed text chat while everything streamers say or do, especially if using a webcam, is broadcasted automatically in real-time [42]. Once a broadcast starts, the streamer may be confined to current tasks or game play. However, the platform allows for shorter attention spans from viewers, who are presented with the multiple concurrent viewing options and may easily switch between streamers. Consequently, viewership may fluctuate depending on the content of a channel [46]. Some viewers may not see Twitch as right place to talk about heavy topics, mental health inclusive, and may only want to see gaming content [22]. Streamers may feel pressured to cater content to audiences' preferences to make viewers stay, as well as to grow one's community and channel numbers.

2.3 Live Streams as Online Communities

By researching the social purposes of live streams, we explore how they go beyond creating and consuming content about various topics like gaming, life experience, information driven issues, or marketing [5]. During streaming, a mix of playful crosstalk and casual conversation can take place alongside the content between streamers and their audiences, creating a sense of co-experience [11]. With such affordance, Hamilton et al. [17] argued that live streams can act as "virtual third places" where viewers of similar interests gather to watch and chat with one another. Live streams can therefore be considered as virtual communities where people share interests, goals, or practices and engage in social interactions [45]. Through such experience sharing, Hu et al. [19] found that viewers form a collective group identity, establish social relationships with one another, and develop group attachment. Drawing on the literature, we also argue that the shared experiences built around streaming interactions among streamers and viewers can sustain the sense of community.

Live streamers, with a group of viewers or followers, are microcelebrities and conduct ongoing performative practices while interacting with their viewers through live, un-staged, and authentic broadcasts [30]. Similarly, viewers do not just passively consume media content but can actively engage with the streamer, the focal point of the channel, and other viewers through the built-in

chat window on the platform [19]. Such streamer-audience interactions are the major distinctions between streaming and other forms of mass communication and make the streamers more accessible, relatable, and engaging [19, 25]. Live streaming is therefore masspersonal in the sense that the scope of the communication accessibility is large, but the perceived intimacy and personalization of communication content is akin to interpersonal communication [30].

Other research stresses the importance of interactive and social experiences through watching live streams [15]. Reaching out to people in real life has been shown to alleviate feelings of loneliness [29]; similarly, researchers have identified that being involved in and participating in communities formed around streamers diminish feelings of loneliness and self-consciousness [16, 17]. Because streamers recognize the importance of building their community through social interactions, many make it a point to engage with their community by having discussions, reading out subscription messages on Twitch, and using polls to interact with their viewers [6, 17]. By becoming a part of a streamer's community, viewers benefit socially and cognitively by learning about games and making new friends with similar passions and interests [17, 37]. Prior research also suggests that the more comfortable a viewer is, the more likely they are to interact with and share their personal anecdotes with the community [6]. Self-disclosing these personal issues on a public broadcast not only serves as its own motivation for participating, but despite its faults, also leads to lessening stigma.

2.4 The Risk and Benefits of Stigma Disclosure

People with mental illness are often stigmatized as being socially disconnected, unattractive, unpredictable, or even dangerous [21]. As a result, people with mental illness are associated with anxiety and low self-esteem and may avoid disclosing their mental illness publicly for fear of social rejection or discrimination [36]. These stigmas can also be harmful as it can lead to delay or refusal of treatment [12]. However, disclosing one's mental illness, negative emotions, and stigmatized experiences can also have the potential to improve one's mental health and well-being through several mechanisms: 1) improving relatedness, 2) seeking social support, and 3) signaling authenticity [25, 28]. Studies have shown that self-presentation on social media has a "positivity bias," meaning that most posts tend to disclose positive life events and emotions [43]. Because of this positivity bias, individuals who are not doing well may experience a conflict between their true self and the norms of social media. For these people, the disclosure of negative emotions and experiences by others can feel authentic and liberating. Studies have shown that these accurate and authentic disclosures can improve self-esteem and well-being [34].

Disclosure can also be used as a coping mechanism to seek social support. Talking about one's struggles with mental illness can help individuals face their emotions and experiences, which can help them cope with the associated anxiety and shame. Disclosure can also make others aware of one's experience and invite social support [28]. A recent study utilizing large networked data has shown that self-disclosure about one's stigmatized experiences can have large-scale ripple effects in encouraging reciprocal self-disclosure of similar experiences and create solidarity for the collective experience [13]. Previous work by Dr. Andalibi explores the benefits of disclosing negative and stigmatized emotions, as well as the response behaviors and decisions regarding these sensitive disclosures [1, 2]. When people are unsure how to respond to sensitive disclosures, they have a tendency to look to wider societal norms for guidance. Twitch, as a platform that emphasizes community, has its social norms created and enforced by both streamers and their viewers [19, 27, 45]. As this behavior falls under context-related decision making, self-related and discloser-related factors also influence responses to sensitive and stigmatized disclosures. For instance, this can include a personal tie to a situation (e.g profession) or a relationship to the discloser [1, 2]. People favor responding to disclosures they can identify similarities with [1].

Thus, this study aims to uncover how viewers and streamers approach mental health discussions on Twitch live streams. Our goal is to understand what factors influence viewers' and streamers' decisions to participate in discussions about mental health and how the Twitch.tv platform affects these preferences. As such, this study focused on the following research questions: (1) What are viewers' motivations to participate in mental health discussions? (2) What are viewers' preferences for how streamers discuss mental health? (3) How does the stream participate in discussions about mental health? By examining motivations, preferences and participation practices, this study aims to provide an understanding for future studies surrounding intimate conversations on Twitch.

3 METHODS

3.1 Participants

Our recruitment process targeted Twitch viewers who experienced witnessing mental health discussions during live streams. We initially reached out to participants from a prior study that surveyed attendees of TwitchCon 2019.

Based on a survey of attendees of TwitchCon 2019, we recruited participants who said they had witnessed mental health conversations. The initial survey asked participants if they would be interested participating in a study regarding mental health conversations on Twitch. Seven out of the 229 people who were contacted were interviewed. We recruited other participants using recruitment posts on Reddit, Twitter, Facebook, Twitch, and gaming-focused Discord servers. Furthermore, we recruited within personal networks. The outcome of our recruitment yielded a total of 25 interviews, primarily using Discord, with the exception of one interview conducted via phone call. Table 1 contains further information about each participant, including demographic information, whether they are a streamer or moderator on Twitch, and how we recruited them. Participants' ages range from 18 to 39 years old ($M = 25.36$, $SD = 5.484$), and the majority of participants were male (16; 8 female, 1 non-binary) and Caucasian (18; 2 Asian, 5 Hispanic).

3.2 Procedure

The interviews had a average duration of 59 minutes ($SD = 25.459$) and ranged between 32 minutes to 2 hours long. We framed the beginning of our interview protocol around questions aimed towards understanding the content and communities each participant engaged with, as well as the type of viewer each participant was, and whether they also streamed or moderated. We then shift into questions regarding who their favorite streamer is and mental health conversations they had observed during their live streams. The interviews ended with questions about participant's opinions on mental health on Twitch, other platforms, and offline contexts in addition to personal experiences with mental health if they wished to disclose it.

3.3 Analysis

We audio recorded our interviews and transcribed them through an online transcription service, with one author at minimum reviewing each transcription. We used the transcriptions to categorize responses in a spreadsheet by interview questions and assigned codes to each response, which were created by identifying keywords and ideas. As each author reviewed the quotes, we kept track of the codes assigned by creating a code-book that contained the codes' definitions. Before creating a new code, we would reference the code-book to check for redundancy. At minimum, two authors coded and reviewed each participant's responses. We then transferred our codes to an online card sorting tool, which we used to better visualize and identify how viewers and streamers participated in and their thoughts about mental health conversations, using a bottom-up approach [38]. This resulted in 14 themes, with multiple codes grouped under them based on the quotes

Table 1. Demographic Information of Participants

Participant #	Age	Race	Gender	Streamer	Moderator	Recruitment Method
P1	20	Caucasian	Female	Yes	No	Personal contact
P2	24	Hispanic	Male	Yes	Yes	TwitchCon 2019 attendee
P3	36	Caucasian	Male	No	Yes	TwitchCon 2019 attendee
P4	34	Caucasian	Female	No	Yes	TwitchCon 2019 attendee
P5	20	Caucasian	Female	Yes	No	Personal contact
P6	24	Hispanic	Female	No	No	TwitchCon 2019 attendee
P7	22	Caucasian	Female	Yes	No	TwitchCon 2019 attendee
P8	33	Caucasian	Male	No	No	TwitchCon 2019 attendee
P9	27	Caucasian	Male	Yes	No	Reddit
P10	23	Hispanic	Female	Yes	No	TwitchCon 2019 attendee
P11	19	Caucasian	Male	No	No	Reddit
P12	28	Caucasian	Female	Yes	Yes	Twitter
P13	21	Asian	Male	Yes	No	Reddit
P14	39	Caucasian	Male	Yes	No	Twitter
P15	23	Caucasian	Male	Yes	No	Twitter
P16	23	Asian	Male	No	No	Discord
P17	28	Caucasian	Male	No	Yes	Personal contact
P18	18	Caucasian	Male	Yes	Yes	Discord
P19	21	Caucasian	Male	No	No	Discord
P20	22	Hispanic	Male	No	No	Discord
P21	26	Caucasian	Male	No	No	Twitch
P22	29	Caucasian	Female	Yes	Yes	Reddit
P23	21	Hispanic	Male	Yes	No	Personal contact
P24	28	Caucasian	Non-binary	No	Yes	Twitch
P25	25	Caucasian	Male	Yes	No	Personal contact

compiled from transcriptions. The data analysis of our themes reflects our research questions: what the viewer motivations to participate in mental health conversations are, how viewers prefer these conversations to be held, and how the community participates in these discussions.

4 RESULTS

4.1 Viewers' motivations to participate in mental health discussions

Our first research question explores why viewers participate in mental health discussions. We found that viewers' motivations varied and were often driven by personal experiences surrounding mental health. By asking participants to describe their experiences on various platforms, we noticed how Twitch can differ from other means of communication through its masspersonal nature, the role of streamers, and the gaming focus of the broadcasts. We observed our participants being motivated by their desires to educate, help others, and have conversations around shared experiences.

4.1.1 To educate. Our participants stated they participated in mental health conversations because they desire to learn more about mental health themselves and educate others on the matter. Some participants, like P13, believe that mental health should be an ongoing, frequent conversation and awareness needs to be brought to it. Similarly, P6 stressed the importance of spreading mental health awareness as it lessens the stigma around the topic. They likened mental health conversations to physical sickness and stated the attitudes towards mental health should be similar. They believe

this normalization, especially in a casual setting like a gaming live stream, would help people become less afraid to tackle the topic. P1, a college student lacking professional mental health resources, stated she encouraged conversations in broadcasts because they guide her in exploring her own mental health. Viewers such as P6, whose goal is to de-stigmatize mental health through conversation, ultimately motivate viewers like P1 who are seeking to further understand themselves.

Furthermore, speaking up to correct misconceptions and support those struggling was a key motivation for some participants. Participants noted occasions in which viewers see others in the chat discounting or, though less common, making fun of others' mental health issues. P21 is more motivated to educate others upon seeing unhelpful advice on broadcasts like "just don't be depressed anymore" because it angers them to see people treat mental health insensitively. He likes to emphasize how mental health disorders are a result of chemical imbalances in the brain and are not a choice. Participants stated it was important for streamers to also educate their viewers because of how many people "look up to these [streamers]" (P19). Whether a streamer has a small or large fan base, P19 believes if streamers are educated on mental health "and they show their chat 'This is a real thing'", it can impact their viewers. As Twitch communities center around a streamer, there is a unique onus on them to reflect their community's desired values. This particularly extends to mental health, as a streamer who is not informed may unintentionally say something insensitive.

One reason that drives participants to educate the community is their personal interest in psychology or mental health. P12 participates in discussions because she is pursuing her bachelor's degree in psychology, and has emphasized her fascination with mental health. She has made it part of her platform to educate and listen to peoples' struggles because she understands how it can impact them. For example, P12 touched upon a misuse of proper mental health language that she often sees: the term "commit suicide" versus the appropriate term, "died by suicide". Regardless of others' knowledge and involvement in mental health advocacy, she is happy to correct and educate others. Some streamers or viewers immediately understand the shift in terminology, or they will ask for references, which demonstrates a willingness to learn. Others may react saying, "I've never heard of that" [or] "I don't think that's right", showing that they are not interested in talking about mental health in constructive manners (P12). This desire to educate and others' willingness to learn provides avenues for mental health conversations to open up. Streamers are in a position to use viewers' interest in dialogues as a way to ultimately lessen stigma around self-disclosure, helping those who suffer from mental health conditions.

4.1.2 To help others. Another common motivation to discuss mental health is the desire to help others who may be struggling. Our participants explained different reasons why they want to support and provide assistance. For instance, P3, who is a viewer and streamer, wants to encourage others to open up because he wants to help them as best he can:

I may not be able to be a mental health professional or to be able to deliver that sort of need or assistance to someone, but I want to be for them what I wish someone had been for me (P3).

Similarly, P12 wants to discuss mental health with the motivation of making others feel safe. She believes that more frequent and open discussions will make it easier for everyone to "get rid of that shame and stigma" (P12). P18 showed similar intentions; his goal is to create a safe space to help others to the best of his and the viewers' ability:

When I hear people talking about Twitch and the mental health issues that can come off of it, I can say, 'All right, this is an underlying theme. I understand, let me help.' It's one of those things where I think it opens up the conversation (P18).

Viewers like P18 who have not personally experienced mental health issues but can sympathize with those who have, are motivated to talk out people's struggles with them. However, they acknowledge that there is only so much streamers and viewers can do, at which point professional intervention is necessary. While many participants who were also streamers try to build safe spaces for discussions on their channels, it can still be difficult for viewers to engage because of their personal history with it. One's experiences with mental health disorders and the severity of it may impact their level of engagement:

I'm more sensitive to conversations pertaining to OCD and anxiety because I'm someone who is bothered by other people's pain... it is difficult for me to engage or be helpful to someone going through that (P7).

While some participants are uncomfortable participating in conversations close to their own experiences, others are actually more comfortable discussing disorders they feel they have a grasp in. Participants acknowledged that hearing about specific topics they related to made them more inclined to participate in mental health conversations:

I'm a registered nurse, so I've dealt with mental health in my profession. It does get emotional sometimes [to] sit there and listen, but if there are certain topics like depression and anxiety that really hit close to home... I get a little more involved (P9).

Although it can be difficult for viewers to open up and discuss issues they have dealt with closely, many still try to provide any assistance they can. By sharing one's experiences with mental health, other viewers may empathize with each other and become more sympathetic towards that person and their struggles. These viewers become motivated to provide support upon seeing the struggles other people face.

4.1.3 To have conversations around shared experiences. Having conversations about mental health brings people together as they realize they are not alone in the struggles they go through. Viewers want to be able to share their experiences with mental health and receive responses from others who have experienced something similar. In doing so, their goal is to provide an open and safe space. For example, P10 explains how she enjoys the feeling that comes when she shares something personal about herself and realizes another person is going through something similar:

Being able to openly discuss it without feeling judged... you feel at ease speaking about these topics and it makes you feel like you can speak about anything and it's going to be okay. (P10)

We found that some participants greatly appreciate the feeling of assurance that comes along with hearing others' experiences because it reinforces the idea that their struggles are not permanent. As a result, viewers may be motivated to share their own experiences as they see how it has the opportunity to help others with their struggles. Such viewers who have experienced the effect of other people sharing their stories are motivated to then share their own in hopes of helping out someone else in a similar fashion. P23 describes how, especially for the younger demographic who feel their struggles are unique to them, sharing personal experiences on broadcasts can be a source of hope:

You have some comfort knowing in the fact that, 'Oh, this is actually a lot more common of a problem than I had originally thought and I know that all these people have gotten through it and have felt better about it' (P23).

Participants like these want to encourage conversations about mental health in order to show how other people have dealt with similar issues. For this reason, viewers like P15 who have anxiety and depression gravitate towards "finding people that are open about that communication like [they are]" (P15). This allows them to add to a discussion where they know their comments will

not only be heard, but reciprocated. Participants who are similarly interested in mental health are motivated to share their own wealth of knowledge with others on the live stream, either as a streamer or as a viewer. They are more motivated to provide resources, share their own experiences, and give emotional support to others on a live stream.

4.2 Viewer's Preferences for Mental Health Discussions

Our second research question explores the various ways viewers want streamers to discuss mental health. Our participants' responses suggest that these preferences are in part due to the sensitive nature of mental health. Viewers' opinions differ in regards to when it is appropriate to discuss mental health topics, how serious the conversation needs to be, whether these discussions should occur on Twitch in the first place, and who should be talking about mental health.

4.2.1 Timing is Important. Streamers have the capability to set boundaries for their channel. One way of doing so is by establishing rules for when, if ever, it is acceptable to discuss sensitive topics like mental health. According to P1, streamers usually have a "set of rules for chats... some people say not to bring up sensitive topics like politics or personal issues." Through communicating these rules on their channel, streamers can delineate what is considered appropriate for their community's culture. If a streamer does not see any time in their broadcast as an appropriate one to discuss mental health, they can preemptively ban the discussion.

In instances where a streamer does not set these boundaries, participants who feel that there are only specific contexts where mental health should be discussed may defer to the streamer's judgement. P8 states, "if the streamer itself brings it up, it can be appropriate. Like sometimes streamers [will say] 'ask me anything . . . and talk to me with any problems you have and we'll talk about it,'" showing that participants look for cues to know when a certain conversation is appropriate. Additionally, P7 believes that viewers initiating the conversation may be detrimental to those participating:

Sometimes it can be inappropriate to bring up mental health topics as a viewer. I would never tell someone they can't do that obviously, but sometimes...you can't tell if it's genuine...It's a hard conversation, and it could really upset someone in the chat if it's not been properly initiated. Someone in the chat [could] say something inappropriate if it's not moderated by the streamer (P7).

Viewers expect streamers to direct the conversation as they are the ones initiating it. This helps focus the discussion and moderation to minimize the likelihood of disingenuous or inappropriate messages from interfering with the conversation. For some viewers, the streamer initiating a mental health discussion clarifies the appropriateness of the conversation as it shows that the streamer is giving it their full attention and is comfortable with it. While the streamer is seen as the main authority on what times during a live stream it is appropriate to discuss mental health, some participants have described situations where the streamer's judgement could be superseded. P20 states how if another viewer posts messages in chat that suggest they may be a threat to themselves, it is appropriate to intervene.

It's kinda hard cause on the internet it's like you never really know if someone's really telling the truth and that, and God forbid that someone is telling the truth and like no one really believes them and they actually do end up hurting themselves ... I would say probably when the person sounds I guess serious enough [is reason to talk about it] (P20).

It can be difficult to identify whether a call for help is genuine or not, so intervening when someone seems to be in distress may be appropriate regardless of a streamer's established culture.

Certain communities may also contain individuals who other viewers may follow the example of, such as moderators or more established community members in the broadcast than typical viewers. P18 feels that if the "right" people are discussing the topic in larger communities, it is appropriate to talk about mental health. As mental health is not necessarily a topic every community member wants to discuss, looking to the example of others in a community can inform a new viewer of the channel's norms. Other participants who felt mental health should be discussed in certain circumstances cited recent events, especially in the gaming world, as appropriate reasons to discuss mental health in live streams. When asked what times are appropriate to discuss mental health, P15 describes how communities can comfort each other during tragedies, such as Etika's (a streamer) passing by suicide:

If you see a streamer getting emotional, overwhelmed, or overworked, that could be a place to comfort them as the viewer and be like, "Hey, like we all struggle. We've all been there". . . When there's a loss in the community because of mental health, it's very appropriate for anybody in the Nintendo community to recall a memory of one of Etika's videos because we lost him to him killing himself (P15).

Tragedies like a prominent figure in a community passing away can be difficult for both streamers and viewers to process. Viewers recalling comforting memories or showing support for a streamer who seems affected by these situations can be appropriate even when the streamer does not intend to initiate a conversation. A conversation can also be appropriate when it relates to the broadcast rather than current events. P19 notes that mental health conversations "tend to be [held during downtime]," as the streamer he described usually pays more attention to his chat during "mundane tasks". Viewers notice that streamers actively pay more attention to chat during these points of the game, suggesting to them it is more appropriate to discuss difficult topics at these times. Additionally, a game's context can be an indicator to a viewer as to when it is appropriate to discuss mental health, as elaborated by P2:

There's Hellblade: Senua's Sacrifice that talks about depression and suicide and those archetypes. . . Contextualizing things like that I think is okay. But honestly, if they're painting something and somehow they say... "I have depression," it's really weird how people can just come to the chat and say those kinds of things. (P2)

Some viewers feel uncomfortable with mental health being discussed in spontaneous circumstances, but the context of a game bringing mental health to light may make the discussion feel more natural. As mental health discussions are personal in nature, a more obvious indicator such as the streamer initiating a conversation or the game's themes relating to mental health helps establish when these conversations are appropriate.

In contrast, a few participants have directly indicated that they have no preference towards when mental health conversations should be discussed. The appropriateness of a topic will usually differ from community to community, and individual to individual. Situations such as another viewer potentially harming themselves, as P20 discussed, are examples where doing so may be considered appropriate. Despite the benefits, discussing sensitive topics still risks the possibility of bad faith actors partaking in the discussion. Streamers can delineate guidelines for what they feel is appropriate for the culture they want for their community, but viewers can still ignore or break these guidelines.

4.2.2 A Specific Tone for Mental-Health Related Discussion. Some viewers believe that discussions surrounding mental health should be taken seriously due to the nature of the topic and should be navigated in specific manners. Depending on the community dynamic and viewers' own experiences with mental health, participants had differing opinions on how mental health should be discussed

on a live stream. Participants like P15 use tragedies in the gaming community, like Etika's passing by suicide, as reminders to other viewers to take mental health as a topic seriously. In situations where viewers do not take the conversation seriously, P4 stated that she has seen streamers and viewers alike shut down trolls that may appear in chat. While many participants noted how viewers ensure mental health is discussed in a destigmatizing and serious manner, some are still wary of discussing it as it can be a difficult conversation to have.

Occasionally, viewers and streamers may steer the conversation in a different direction to ensure mental health is not talked about poorly. Such viewers and streamers believe that mental health is a delicate issue that needs to be handled in a way that the community cannot provide, so they prefer not talking about it at all out of respect: "There are so many things that could be said or done if it's not a moderated discussion" (P7). As discussing mental health can invite bad-faith viewers to post toxic messages, avoiding the topic is sometimes seen as the more practical approach.

Trolls, however, are not the only people who may handle a conversation about mental health poorly. P12 recalls times she witnessed streamers making jokes in poor taste:

People would say things like, 'well obviously you have an issue with your mother because you want to fuck her sort of thing'. There's a difference between saying... a joke [like that] and British dry humor... You could see them laughing about it and like "I'm just teasing, I don't really mean that". (P12)

Some people use humor and comments to avoid talking about difficult issues; however, viewers do not believe these should be taken lightly. Because some may not be as educated on mental health issues, they may give questionable advice such as "have you ever tried not being sad?" which P12 noticed some viewers say in response to others sharing their mental health struggles. This, as well as jokes like the one described earlier, could reinforce a culture in which mental health is not taken seriously.

Mental health may also not be given the seriousness it deserves in viewers' eyes if someone gives poor advice. P23, for example, recalls a streamer's reaction to a donation:

I very vividly remember this [streamer's] example because when the guy explained in a heartfelt message that he was depressed to [the streamer], [his] actual response to that was "Hey man, don't be depressed". And it just honestly made me feel so bad for the guy who was reaching out to him cause he just didn't know how to respond to him.

Though the streamer may not have had any ill intent, his response to his viewer's donation message negatively affected this participant's view of him. As his lack of knowledge relating to mental health made it difficult to respond to the donation message, the streamer was not able to give the topic the seriousness P23 felt it deserved. Notably, P23 also contrasted this story to their experience with a streamer who did give mental health proper attention. This second streamer would occasionally start Just Chatting live streams and connect with her community, which he found to be a refreshing change. Comparing responses from different streamers emphasizes the importance of the tone of a mental health discussion to participants. Streamers who provide help or resources tend to be seen as someone who cares and is more connected with their community, while streamers who do not provide the same type of support or response for their community may not be seen in the same light as before.

4.2.3 Twitch as an Inappropriate Space. As Twitch is primarily a platform for streamers to broadcast games, some participants believe that mental health conversations generally should not be held on the platform. P2, a moderator and viewer, states that viewers often initiate conversations about mental health due to "[having] nowhere else to turn to," and that live streams are not normally where someone should discuss it. As P2 also believes that Twitch is "supposed to be an entertainment

platform and not a mental health platform," viewers using a streamer's chat to vent or discuss mental health are typically doing so not because it is an appropriate space, but because of a lack of support from elsewhere. While a streamer's community may be a place of comfort to some viewers, not all viewers will feel that personal discussions are appropriate to hold on Twitch.

4.2.4 Mental Health Topics Require Authority. The final preference we observed among participants is to what extent a streamer has the authority to discuss mental health. Streamers do not inherently have professional experience discussing mental health, and we noticed that participants feel that streamers should involve themselves in conversations to different extents.

No Obligation To Discuss Mental Health. Some viewers believe that streamers should not be obligated to talk about mental health on their channel. Since they are not mental health professionals, streamers should not be compelled to discuss the issue. A streamer's main responsibility is to entertain their viewers, especially if they make a living by streaming. Giving opinions on a sensitive topic like mental health without the proper qualifications can alienate viewers, so some streamers opt to not discuss it.

Participants think that streamers do not have to discuss all topics that arise in the chat and can choose what can and cannot be talked about on their channel. P1 says they have seen viewers say "not to bring up sensitive topics like politics or personal issues or not to ask a streamer" because they may not respond. In such cases, "if someone brings it up in a chat and a streamer doesn't want to respond, they have that choice to not really respond to the person. But if they do, then I think it's okay to be talked about (P1)". As streamers have the option to not respond to all chat messages, viewers believe it is important for them to establish their boundaries.

The people watching [streamers] think that they're friends and it's not how that works. [Streamers] have to go out of their way and say, "I'm here to entertain you. We can have a nice community, but I personally do not know you. So I can't really be like a close friend of yours." (P2)

Viewers may otherwise feel that their closeness to the streamer allows them to open up about personal issues even if the streamers are not comfortable with discussing them and giving professional advice.

Caveats about Streamers' Advice. Several participants believe that streamers who lack professional qualifications related to mental health should not offer advice. This, however, does not mean that streamers cannot discuss it in any capacity as they may still advocate for mental health. P2 explained this by pointing out how "you need to be a licensed professional to actually give them realistic advice and to help them work through things." However, talking about feelings related to mental health does not require any specific qualification to these participants. As the average person may lack the perspective to offer productive advice to someone who asks for it, doing so has the potential to be harmful.

The difference in authority between a streamer and a trained professional not only comes from their knowledge of mental health, but also their familiarity with a viewer's case. While a streamer can give generic advice if necessary, P18 feels that it is more important as an advocate to recommend people to textcolorredseek mental health professionals. Similarly, P12 explains that even people with professional qualifications should preface their advice by mentioning viewers should turn to their own counselor first. Doing so for a viewer who is seeking help on a live stream still shows advocacy for mental health without giving ill-informed advice. The participants who believe that advice should only be given professionally do so because streamers do not always have the qualifications to give supportive advice and cannot be expected to know a viewer seeking help.

However, this does not mean that they are unqualified to talk about mental health as an advocate or suggest that someone seeks help.

Only Qualified If They Have Experiences With Mental Health. Professional experience is not the only authority viewers may perceive streamers as having. If someone has personal experience with mental health, viewers may see them as more qualified to discuss mental health. P9 explains that sharing one's own experiences "whether . . . good or bad," can help people out there "grasping for anything they can get a hold of." As mental health is a stigmatized topic, viewers who feel isolated due to their mental health may find solace in knowing that someone has dealt with a similar situation. P25 adds that "going to a psychologist is actually like rebuilding your fundamentals . . . whereas [talking to someone with a similar experience] . . . can help you feel more understood or supported." Those who have personal experience with a mental health issue have a different relationship to mental health than a psychologist, as a psychologist does not necessarily have to have dealt with mental health issues of their own. Someone who lacks professional authority but has personal experience thus has a unique authority over the topic mental health.

This authority, however, does not enable someone without professional experience to act as someone with it. P21 believes that is appropriate for someone with only personal experience to discuss mental health "as long as someone's talking about their own opinions and ... experiences within the context of the mental health system." Similar to how some professionals do not feel comfortable giving advice to viewers they lack a frame of reference with, participants do not feel comfortable with people giving advice if their experiences are not related to the discussion at hand. Personal experience with mental health and professional knowledge give people different kinds of authority. For either to be appropriate, the person speaking needs the right frame of reference and experience to understand the conversation.

Anyone can Discuss. While participants see having mental health experiences or professional knowledge of one's own as a form of authority, a lack of authority does not prevent someone from contributing to a conversation about mental health. Thus, as a counterpoint to those who believe that some mental health topics require some form of authority to discuss, a few participants stated that anyone has the right to discuss mental health. P12 states that as everyone is affected by mental health, knowing when to seek psychological help for certain symptoms should be as commonplace as seeking a doctor's help for a chronic back ache. By discussing symptoms of a mental health condition in a similar sense to how back pain would be, even those who do not have prior knowledge or firsthand experience can help others get the specific help they may need. Though this requires some knowledge about mental health, being familiar with symptoms of common mental health conditions does not grant a Twitch viewer with any significant form of authority.

The extent to which someone with no firsthand or professional experience with mental health can help is not limited to recommending someone see a professional based on their symptoms. P3 describes the way he sees a typical streamer should be involved in mental health conversations. They mention that in some cases, they have to look at "what [is] the most effective and sometimes [listening is] all a streamer is capable of" because they do not know the viewer on a person level (P3). In most cases, viewers are accepting of when streamers offer feedback, advice, and generally asking how they can help.

It's really as far as they want to go. You can have somebody that is willing to go help you find a therapist... It [runs] case by case, how involved they want to be in the personal lives of their community, not just as a streamer...but as a person to person connection. (P3)

While the ability of a streamer to help someone in need will vary based on their prior experiences, level of comfort, and relationship to the person they are helping, authority is not always seen as necessary. By recognizing that someone in their chat needs help, using intuitive methods such as listening to that viewer vent, asking questions about their situation, or assisting them in finding a professional can sometimes be the best they can do. As long as someone is not crossing their personal boundaries, assisting someone does not require personal or professional experience with mental health. Participants who believe that anyone can discuss mental health do not necessarily believe that authority is not relevant in a discussion about mental health, but rather that anyone should be able to provide support to someone in need.

4.3 How the Stream Participates in Discussions About Mental Health

Our last research question delves into how streaming communities function and actively participate in various discussions about mental health. In contrast to RQ1, which covered viewers' motivations, here we explore the actual behavior and actions on Twitch as the result of motivations. Most responses entailed supporting streamers or other viewers depending on one's own experiences, as well as what individuals were comfortable with sharing on the live stream. Participants noted four key ways in which they either took part in or saw others take part in mental health conversations during live streams: providing resources and information, calling people out when they are insensitive, giving emotional support to the chat or streamers, and discussing shared experiences.

4.3.1 Providing resources and information. One way that viewers and streamers participate in mental health discussions is by providing resources and information either on the broadcast or in the chat. In most scenarios described by participants, streamers provided resources or information to their viewers, rather than viewers providing them to other viewers. Some streamers prefer to share their thoughts and have discussions with viewers on mental health topics that have come up frequently within their community. P12, a mental health streamer, illustrated how she approaches discussions about current mental health topics:

I'll do a Just Chatting or a talk show where it's very specifically about... something that's been coming up within the Twitch atmosphere. A lot of people are tweeting about it... in my community (P12).

Additionally, P12, who was pursuing a bachelor's degree in psychology, said she found it important to have an open atmosphere to talk about mental health appropriately. During these talks, she would discuss topics she had seen on her social media and initiate conversations with her community to educate them. This is a rare occurrence to see on Twitch though, as not all Twitch streamers share P12's background in and passion for psychology.

Other streamers who wish to educate their viewers but do not feel authorized to do so may turn to the help of professionals. Viewers noted that streamers may not feel comfortable dealing with directly addressing mental health if they do not have the experience or knowledge to effectively support their viewers. In such cases, though rare, participants reported some streamers would invite therapists as guests to speak on their live stream. Hosting professionals on stream encourages appropriate and healthy conversations about mental health, on and off-stream. P17 detailed a situation where a streamer did this in order to help facilitate a discussion on issues the streamer and his viewers were undergoing, as well as to educate other viewers:

I think everyone would have learned quite a bit in that instance because he was dealing with an actual professional and in my kind of limited experience and just going to counseling and therapy a few times, it seems like this doctor's kind of overall mindset and way of attacking the problem seems so different from anything that I had experienced before (P17).

Alternatively, participants observed certain streamers hosting charity live streams or "group events that [encourage] people who struggle with mental illness to get help for it" (P21). These events simultaneously raise awareness and money throughout the broadcast, which is then donated to the streamer's organization(s) of choice, mental health or otherwise. Hosting these events and charity live streams allow streamers to still provide resources and information regarding mental health in a way which is more accessible to streamers, as not all have connections to mental health professionals.

The last way participants observed streamers provide resources to their viewers is by simply talking with them, sharing links, and, in dire cases, reaching out to law enforcement to ensure the well-being of their viewers. P4 explained how a streamer she watches not only listens to viewers' issues and shares online resources with them, but also takes extra steps to make sure they are safe:

If we find out one of the community members might be [at] suicide risk... if he's found out the whereabouts of where they live, their name, a base description of them even, he will call the local police... And a lot of people, he has helped. This has worked multiple times for multiple people (P4).

Being a moderator, P4 can directly attest to the regular impact a streamer has on their community. In situations like these where the streamer feels particularly close to their community, they may feel a duty to their viewers to ensure their safety. Participants ultimately believe streamers employ a variety of methods to educate their community and share resources they have accumulated through their communities. Taking into account the topic of the live stream, length of the conversation, level of streamer's comfort discussing sensitive issues, and each streamer's own experiences, the way in which mental health is discussed will vary from live stream to live stream to fit the persona the have cultivated.

4.3.2 Calling people out when insensitive. While streamers and viewers who talk about mental health attempt to do so in ways that are educational and supportive, there are some occasions in which mental health is discussed in stigmatized or negative manners. In these cases, some viewers will counter with their own input on the subject.

Viewers who like to interact by giving emotional support to the chat will also chime in when they see "something that... really bothers [them]" (P7). These types of viewers are just as likely to speak up when they see mental health discussed wrongly as they are with providing resources or support because it is personal to them. If a community is predominantly in favor of destigmatizing mental health and a viewer tries to discount it, the community as a collective may speak up against them. P4 shares how they have observed this happening, as well as their feelings towards the behavior:

I'm always happy to hear that if every once in a while you get that troll in the chat that tries to put people down [you are] able to see a community and a streamer ... be like, "Yeah, you're done. That's not right. That's not how we are here"... It's very rewarding (P4).

Types of communities that go against a troll together are typically more open and positive about discussing mental health. Depending on the streamer's community, these situations can play into the hierarchy of Twitch where viewers will follow a streamer's lead in banishing the troll. While this instance depicts a streamer's community cultivating this atmosphere, some participants recounted experiences where mental health was not taken as seriously in other communities. P21 explained how, though infrequently, they "see a lot of people... discounting it":

When people make fun of it, it kind of pisses me off because [they say]... 'just don't be depressed anymore', [but it's not that]... my body doesn't produce the chemical needed to be happy (P21).

Participants have observed advice and comments similar to this be given by other viewers, but stress how these types of comments are not helpful or supportive in the slightest. Rather, comments like these are insensitive to those undergoing mental health struggles. Overall, viewers may feel compelled to talk about mental health in the way they feel is best, which may be correcting unhelpful and misguided comments, educating the perpetrators of said comments, and countering negative affects with emotional support.

4.3.3 Giving emotional support to others. One of the more common methods of participating in mental health discussions was giving emotional support to streamers and/or viewers who discuss their experiences and struggles with mental health. Our participants noted how streamers and viewers collectively participated in these actions. Emotional support includes providing empathy and reassurance, in addition to relating to others' experiences to signify they are not alone in their struggles.

Although viewers call out insensitive, unsupportive, and harmful behavior, unfortunately the behavior can run rampant. A streamer's community can turn against them despite them controlling the direction of the broadcast, causing viewers to provide more harm than support. P10 recalled a situation in which emotional torment was inflicted upon a streamer by her viewers:

She was playing League of Legends... and out of nowhere these viewers came attacking her because of a streamer that she recently mended her friendship with... And then she broke down... "you guys don't understand the pressure you guys put me through." ... It was so crazy because people... were making fun of her crying (P10).

Viewers felt that the streamer had made a wrong decision regarding her personal life due to its overlap into streamer relations and responded with toxicity, despite it causing her distress. In some situations, a streamer going against what their own viewers perceive as right is enough to elicit vocal disagreement or, in worse situations, backlash. While not all communities may respond in a hurtful manner, the community which has developed outside of the streamer can supersede them. While this participant recollected a counter occurrence of emotional support, other participants shared more positive experiences within broadcasts. P15 gave an examples of viewers opening up about therapy or their home lives. This allowed others' to relate and chime in with supportive messages which helped the viewers cope. Additionally, P15 described how participants in communities often come together, "usually like a collective" and, "[have] each other's backs". Even if the initiation of a mental health discussion is negative or stressful, there is usually an uplifting resolution, and therefore it is beneficial to let the discussion continue at the discretion of the streamer and moderator.

Participants also saw others show empathy and positivity in the face of mental health topics, and emphasized the importance in doing so. P12, as a viewer, likes to reassure to those venting that others are in fact present and listening. She does so by saying things like, "Hey, I'm here. I'm listening to you right now. I'm a shoulder to cry on at the moment or ear to vent to" as well as "I'm so sorry to hear that, you're not alone". Similarly, P16 has seen people empathize with others by saying things such as, "Hey, I know it's hard for you". P16 believes it is courageous and important for people to share their mental health experiences and that it "encourages other people to try to relate to each other". P12 acknowledges that, while these seem like simple actions, they can go a long way and there is great importance in allowing others the space and time to vent their feelings.

Certain participants' level of engagement depends on their mood or what specifically is being discussed. P9 would usually lurk in a broadcast (sit and listen), but if a relatable experience arose, they would engage in conversation about how they overcame similar situations. Similarly, P24 said they "like to offer [their] advice or help when [they] feel like it's applicable". P24 also talked about how, alternatively, they get upset in conversations where they do not understand what's going on, so they prefer to stick to giving support only where they feel comfortable. As each user's experience with mental health and related stigma varies, their level of support and involvement will vary in on-stream discussions. While participants covered various methods of giving emotional support, commonly such discussions revolved around empathizing with others and sharing what worked for them in similar situations. Overall, viewers will ultimately provide the level of emotional support to others on the live stream that they are comfortable doing so.

4.3.4 Discussing shared experiences. Our participants' accounts offer insight into how these broadcasts function in the face of sharing experiences related to mental health topics. Both viewers and streamers discuss, reflect on, resolve, and drive the topic of the channel collectively. By discussing shared experiences, viewers contribute to and strengthen the dynamics that exist between streamers and their communities.

For example, participants see viewers initiate mental health discussions by sharing their own struggles. P15 detailed seeing viewers share experiences and how others in chat are able to relate and join the conversation:

A viewer will talk about how they started therapy or they'll talk about their situation at home and how it's affecting them... how it's contributing negatively to something like their anxiety or their depression. And usually they'll end something like that with like, "Oh, but the stream is really helping me deal with that". Somebody else in chat will talk about their own struggle with it (P15).

After seeing other chat members discuss mental health, other viewers may feel more comfortable discussing their own experiences, helping normalize mental health experiences. Streamers also can contribute to this communal sharing of experiences, as P14 explained:

I will openly bring it up because I've had many cases where I'll have... a bad month of depression-induced insomnia. So I will have had two hours of sleep the night before and I'm either late to my stream or I am visually tired on my stream. I'll just throw it out there and be like, 'Hey, you know, here's what's going on.'" (P14).

By casually mentioning why they may be acting different, streamers become more open about their experiences. This helps counteract the stigma that comes with disclosing personal issues; streamers, as the focal point of their communities, can encourage their viewers to discuss mental health through example. This can lead to mental health conversations becoming normalized and viewers seeking professional help.

In addition, a streamer choosing to talk about their mental health may increase a streamer's authenticity and relatability. P11 feels very close to one of their favorite streamers because they, "understand his mental health [and] what he's dealing with". This streamer shared with his community that, "he [had] been struggling with depression", something that P11 struggled with as well. Participating in this streamers' discussions regarding his own mental health changed P11's perception towards mental health positively and "grew stronger bonds with his stream". By discussing his depression, P11's streamer demonstrated his own struggles with mental health and became more relatable to viewers.

Relating to viewers and streamers also provides an avenue for people to help each other within live streams. P9, for example, would reassure others in the chat that, "[they] feel this too. This is

how [they've] overcome these situations". These participants shared how they persevered, therefore indirectly providing advice to others in the community. This contributes to a collective reassurance that viewers are not alone in their situation, and that it is possible to navigate. Ultimately, viewers and streamers discussing their shared experiences not only provides avenues to help cope with their mental health struggles, but also brings their communities closer together.

5 DISCUSSION

5.1 Platform Governance

RQ2 (Viewer's preferences for mental health discussions) reveals a key component to what makes Twitch unique for mental health discussions: these online communities are centered around a streamer whose preferences and viewpoints on mental health impact those of their viewers, creating a hierarchical structure. Throughout RQ2, we often saw that a streamer's judgement around a mental health conversation influenced how viewers responded. In 4.2.1, we see viewers generally wait for their streamer to set their boundaries before initiating a conversation related to mental health. However, we found cases where this dynamic is broken, the most notable of which are when key members (e.g. moderators or viewers marked as "VIP"s in the chat) of the community want to discuss mental health and situations where a viewer may be a danger to themselves. Furthermore, it is important to note how viewers, particularly as a collective group identity, [19] also have significant influence on streamers' decision making. This may be due to pressure on streamers to appease their communities in order to upkeep viewership and maintain preferred standards for their channel [14, 46]. Both instances are consistent with prior work regarding wider societal norms' influence on responses to and discussion about sensitive topics [1], but show how the social norms on Twitch may fluctuate. Streamers are the primary influence towards their community's norms, but strongly-willed or more knowledgeable viewers may help direct streamers when they are not certain of societal norms. While moderators or viewers may respond to and have varying influences on mental health discussions, streamers are still the predominant influencers of their channel's culture and norms. As such, this hierarchical structure specific to Twitch communities differs from many other influencer-centered platforms which tend to have a flatter host-viewer structure.

This hierarchy fosters stronger communities, which eventually encourages social media aggregation beyond Twitch as a platform [42]. Viewers may choose to follow this to respect the branding and community dynamics their streamers cultivated, which is especially relevant for larger communities. Because Twitch centers channels around a streamer's personality, it reinforces this hierarchy through the chat functionality [19]. Whether the streamer views messages in real-time or through a filtered chat from the help of moderators, streamers can choose what chat messages to respond to. A moderator's decision to keep or delete messages is usually based on the streamer's rules and channel norms; they are influenced more by the streamer than the viewers [4]. Thus, viewing chat through a moderator's perspective may further reinforce the streamers' own community decisions. This top-down hierarchy of streamer to moderator to viewer skews discussions toward what streamers focus on, ultimately dictating what types of discussions are promoted on their channel.

Streamers, being at the top of the live streaming user hierarchy, have a large influence on the discussions fostered on their channel. Viewers will initially join streamer communities where they identify with other members and can be entertained during a live stream together [10]. In such cases, viewers may participate according to the streamer's community guidelines. Once the guidelines are well-developed, community norms may grow beyond the streamer. In 4.3.2, we touch on an instance where a community, due to their collective pre-existing opinion on mental health,

came together with the streamer to shut down a troll who was commenting negatively towards mental health. While communities tend to act in association with the streamer's guidelines, there are few cases of this dynamic being challenged. An extreme case is seen in 4.3.3, where a streamer's chat went against her by mocking her mental breakdown and disagreeing with her personal life choices.

Our results seem to indicate that while communities are centered around streamers, community norms and the entire chat's behavior may go also against streamers. While streamers are at the top of Twitch's user hierarchy, there are instances where the viewer base strongly influences the streamer's presentation and behaviors. The stigmatized nature of mental health could cause viewers to leave the channel during active discussions. To avoid this, the streamer may change the direction of the broadcast to maintain high viewership. Further research is required to truly explore how various streamer-community dynamics impact discussing mental health as a result of streamer influence and viewer-based community norms.

5.2 Stigma Disclosure

As streamers' brands are personalized and their communities are centered around themselves, Twitch affords its content creators to be more authentic and personal. While some streamers want to make mental health discussions a part of their brand, others may not feel comfortable doing this and may seek other ways to connect with their viewers. For streamers in the latter category, who are put in a position where they are expected to discuss mental health, informal education is one way a streamer can show they are not dismissive of mental health. While self-disclosure can achieve similar effects in terms of spreading awareness [28], the stigmatized and personal nature of mental health may make some streamers less inclined to connect it with their brand so directly. Education without self-disclosure is especially important considering the stigma those with mental health conditions may face from a largely unknown audience [36].

One of the main motivations for viewers to use Twitch is to learn about strategies related to game play [16, 32]. Though some viewers expect to learn during broadcasts, learning about mental health may be an unexpected, but related, outcome. In events of mental health discussions being spontaneously brought up, participants believe the most important thing a streamer can do to show advocacy is to provide resources rather than support or advice. Viewers who primarily talk about mental health to educate others, as discussed in RQ1, also believe that streamers educating viewers using their influence can help destigmatize mental health.

Consistent with previous findings on how disclosing struggles increases social support [2, 28], and consequently physical and mental well-being [34], the community may want to educate others in hopes of building a closer community. Informal education is an important tool streamers have to counteract the stigma associated with mental health regardless of their method and level of involvement. Those who want to dedicate more of their brand to mental health can also educate by inviting mental health professionals onto live streams or hosting charity live streams, as results have shown. Though providing such information and resources can be more difficult, many mental health discussions witnessed were incidental or otherwise unplanned by the streamer.

One notable issue with informal education is a lack of transparency around the qualifications of people providing it, as seen in mental health care mobile applications [23]. Some participants stated that they do not think that people without personal or professional experience should discuss mental health, especially when providing advice. In 4.1.1, P12 discussed how she keeps streamers in check with proper usage of mental health terms, correcting them if they misuse said terms accordingly. Though this participant studied psychology, most viewers may not have this same experience, consequently bringing into question their authority to comment on mental health. The

possibility for viewers or streamers to feign authority on mental health invites the potential for bad faith actors to provide malicious advice or misinformation.

5.3 Design Implications

The nature of Twitch's platform allows for a unique conversation between a streamer and their viewers through various functionalities such as chat messaging, subscriptions or donations to streamers or their supported charities, and more. Previous research indicates that Twitch users primarily use the platform for entertainment and knowledge [16]. However, it is important to take into consideration new additions Twitch may want to incorporate into their platform to support community development.

We noticed varying opinions on who has the qualifications to discuss mental health during live streams. While some participants mentioned having any experience with mental health is enough, many others preferred that only mental health professionals discuss and give advice. However, due to Twitch's focus on entertainment, there is no way of officially determining mental health professionals on the platform. We suggest Twitch creates a verification system where users can submit their professional credentials (ie. degree, certifications) in mental health and related fields to gain an icon tied to their account. Those who believe they are qualified but fall outside of Twitch guidelines for this icon could communicate so with their audience. This icon could give reassurance to users listen to their advice or suggestions using discretion. The absence of this icon is just as telling as its presence: if a streamer without this verification speaks about mental health, users know to take the speaker's comments with caution. Streamers talking about mental health where it was not the main topic generally do not have their channel geared towards it; as such, those who desire to make it a part of their brand may want to be verified to signify their authority. In comparison to streamers simply communicating their credentials to streamers prior to such discussions, this prevents streamers from falsifying their authority and reassures viewers that the information they are receiving is from a trusted source. To prevent liability issues, Twitch may put out a disclaimer that while they are verifying mental health professionals on the site, people should primarily heed their own doctor's advice and care regimen, similar to how other sites and applications disclaim users against using them as a substitute to professional medical care [23].

Twitch could additionally support mental health by educating those using their Creator Camp program. Twitch currently provides a guide for new creators, the "Twitch Creator Camp", that includes sections such as "Twitch 101" and "Branding and Analytics" to help streamers navigate Twitch basics, as well as to build and maintain their channel. Here, Twitch could add a section on navigating mental health discussions and other difficult, personal topics. The section can provide streamers with many resources to share: trustworthy resources, tips on healthy ways to navigate personal discussions, and how to respond to self-disclosure. Overall, this creates a safer and more supportive community on Twitch for personal issues.

We see Twitch as a great place for users to come together under shared interests, to learn, and to educate. However, with this comes the risk of spreading misinformation, as Twitch is not an avenue for professional help. The platform lacks built-in functionalities to provide visible education and official resources. Similar to Tumblr's list of resources that pop up when users search sensitive topics [40], Twitch may benefit from adding a list of links to mental health resources that streamers can share through an easy access macro or button on their dashboard. This addition allows streamers to quickly share resources with their community in instances where they may not feel comfortable discussing the topic on their own but still want to provide support.

Additionally, we suggest Twitch add a new emote or set of emotes, such as a "global hug", to represent mental health solidarity. We see a similar idea with the existing Facebook's Care React, which is a reaction as an emoji hugging a heart, showing care and solidarity on the platform [20].

Providing a mental health solidarity emote could give users a visually prominent and easy avenue to show support.

6 LIMITATIONS AND FUTURE DIRECTIONS

While this study brings about an understanding of how and why viewers discuss mental health on Twitch, it is not without its limitations. First, this study only looked at Twitch as a live streaming platform; exploring the dynamic between users and streamers and their perceptions of mental health on other platforms (e.g. YouTube Gaming) may provide unique results. This study was also comprised of primarily U.S. based participants, and may not be generalized to the international Twitch population. The sample also consisted of participants who knew the topic of study prior to being recruited, and thus have a self-selection bias as they were generally more open to discussing mental health. Further research may be required to understand the motivations and habits of those who do not have a disposition towards discussing mental health.

Our study contributes to social media and mental health stigma studies by exploring mental health discussions in the context of live streams and real time conversations, which has not been widely explored before. From our results, there are a variety of directions future researchers could pursue regarding mental health on live streaming platforms. First, researchers could investigate how viewers' age impacts the motivations and participation habits of viewers and streamers. Because Twitch streamers cater to a variety of people, all of whom have their own community norms and guidelines, unique results on mental health discussions may be found from understanding the demographics of community members. Scholars could also examine user motivations within the contexts of certain live stream types, and seeing how the category of live stream and game type affects discussions. As this study focused on the viewers, future researchers can also explore these streamers' points of view. As streamers are the focal point of Twitch channels and communities, their perspective on mental health discussions could provide input towards their feelings on authenticity and how self-disclosure may take a role in their branding.

ACKNOWLEDGMENTS

We would like to give thanks to Ross Bonifacio and Christine L. Cook.

This research was supported in part by National Science Foundation grant no. 1841354.

REFERENCES

- [1] Nazanin Andalibi and Andrea Forte. 2018. Responding to sensitive disclosures on social media: A decision-making framework. *ACM Transactions on Computer-Human Interaction (TOCHI)* 25, 6 (2018), 1–29.
- [2] Nazanin Andalibi, Pinar Ozturk, and Andrea Forte. 2017. Sensitive Self-disclosures, Responses, and Social Support on Instagram: the case of# depression. In *Proceedings of the 2017 ACM conference on computer supported cooperative work and social computing*. 1485–1500.
- [3] Benjamin Burroughs and Paul Rama. 2015. The eSports Trojan horse: Twitch and streaming futures. *Journal For Virtual Worlds Research* 8, 2 (2015).
- [4] Jie Cai and Donghee Yvette Wohn. 2019. Categorizing Live Streaming Moderation Tools: An Analysis of Twitch. *International Journal of Interactive Communication Systems and Technologies (IJICST)* 9, 2 (2019), 36–50.
- [5] Jie Cai, Donghee Yvette Wohn, Ankit Mittal, and Dhanush Sureshbabu. 2018. Utilitarian and hedonic motivations for live streaming shopping. In *Proceedings of the 2018 ACM international conference on interactive experiences for TV and online video*. 81–88.
- [6] Chia-Chen Chen and Yi-Chen Lin. 2018. What drives live-stream usage intention? The perspectives of flow, entertainment, social interaction, and endorsement. *Telematics and Informatics* 35, 1 (2018), 293–303.
- [7] Joanne Davila, Rachel Hershenberg, Brian A Feinstein, Kaitlyn Gorman, Vickie Bhatia, and Lisa R Starr. 2012. Frequency and quality of social networking among young adults: Associations with depressive symptoms, rumination, and corumination. *Psychology of popular media culture* 1, 2 (2012), 72.
- [8] Brian Dean. 2021. Twitch Usage and Growth Statistics: How Many People Use Twitch in 2021? <https://backlinko.com/twitch-users>

- [9] Fenne Große Deters and Matthias R Mehl. 2013. Does posting Facebook status updates increase or decrease loneliness? An online social networking experiment. *Social psychological and personality science* 4, 5 (2013), 579–586.
- [10] Vaibhav Diwanji, Abigail Reed, Arienne Ferchaud, Jonmichael Seibert, Victoria Weinbrecht, and Nicholas Sellers. 2020. Don't just watch, join in: Exploring information behavior and copresence on Twitch. *Computers in Human Behavior* 105 (2020), 106221.
- [11] James Dux and Janghyun Kim. 2018. Social live-streaming: Twitch. TV and uses and gratification theory social network analysis. *Computer Science & Information Technology* 47 (2018).
- [12] David B Feldman and Christian S Crandall. 2007. Dimensions of mental illness stigma: What about mental illness causes social rejection? *Journal of social and clinical psychology* 26, 2 (2007), 137–154.
- [13] Ryan J Gallagher, Elizabeth Stowell, Andrea G Parker, and Brooke Foucault Welles. 2019. Reclaiming stigmatized narratives: The networked disclosure landscape of# MeToo. *Proceedings of the ACM on Human-Computer Interaction* 3, CSCW (2019), 1–30.
- [14] Reesha Gandhi, Christine L Cook, Nina LaMastra, Jirassaya Uttarapong, and Donghee Yvette Wohn. 2021. An Exploration of Mental Health Discussions in Live Streaming Gaming Communities. *Frontiers in psychology* 12 (2021), 751.
- [15] Daniel Gros, Brigitta Wanner, Anna Hackenholt, Piotr Zawadzki, and Kathrin Knautz. 2017. World of streaming. Motivation and gratification on Twitch. In *International Conference on Social Computing and Social Media*. Springer, 44–57.
- [16] Juho Hamari and Max Sjöblom. 2017. What is eSports and why do people watch it? *Internet research* (2017).
- [17] William A Hamilton, Oliver Garretson, and Andruid Kerne. 2014. Streaming on twitch: fostering participatory communities of play within live mixed media. In *Proceedings of the SIGCHI conference on human factors in computing systems*. 1315–1324.
- [18] Zorah Hilvert-Bruce, James T Neill, Max Sjöblom, and Juho Hamari. 2018. Social motivations of live-streaming viewer engagement on Twitch. *Computers in Human Behavior* 84 (2018), 58–67.
- [19] Mu Hu, Mingli Zhang, and Yu Wang. 2017. Why do audiences choose to keep watching on live video streaming platforms? An explanation of dual identification framework. *Computers in Human Behavior* 75 (2017), 594–606.
- [20] Andrew Hutchinson. 2020. Facebook Unveils New 'Care' Reactions to Help Express Responses to COVID-19. <https://www.socialmediatoday.com/news/facebook-unveils-new-care-reactions-to-help-express-responses-to-covid-19/576318/>
- [21] Anat Klin and Dafna Lemish. 2008. Mental disorders stigma in the media: Review of studies on production, content, and influences. *Journal of health communication* 13, 5 (2008), 434–449.
- [22] Nina LaMastra, Jirassaya Uttarapong, Reesha Gandhi, Christine L Cook, and Donghee Yvette Wohn. 2020. How a Live Streamer's Choice in Played Game Affects Mental Health Conversations. In *Extended Abstracts of the 2020 Annual Symposium on Computer-Human Interaction in Play*. 297–300.
- [23] Mark Erik Larsen, Kit Huckvale, Jennifer Nicholas, John Torous, Louise Birrell, Emily Li, and Bill Reda. 2019. Using science to sell apps: evaluation of mental health app store quality claims. *NPJ digital medicine* 2, 1 (2019), 1–6.
- [24] Yu-Hao Lee and Chien Wen Yuan. 2020. The Privacy Calculus of "Friending" Across Multiple Social Media Platforms. *Social Media+ Society* 6, 2 (2020), 2056305120928478.
- [25] Yu-Hao Lee, Chien Wen Yuan, and Donghee Yvette Wohn. 2020. How Video Streamers' Mental Health Disclosures Affect Viewers' Risk Perceptions. *Health Communication* (2020), 1–11.
- [26] Liu Yi Lin, Jaime E Sidani, Ariel Shensa, Ana Radovic, Elizabeth Miller, Jason B Colditz, Beth L Hoffman, Leila M Giles, and Brian A Primack. 2016. Association between social media use and depression among US young adults. *Depression and anxiety* 33, 4 (2016), 323–331.
- [27] Tabitha M London, Joey Crundwell, Marcy Bock Eastley, Natalie Santiago, and Jennifer Jenkins. 2019. Finding effective moderation practices on Twitch. In *Digital Ethics*. Routledge, 51–68.
- [28] Mufan Luo and Jeffrey T Hancock. 2020. Self-disclosure and social media: motivations, mechanisms and psychological well-being. *Current opinion in psychology* 31 (2020), 110–115.
- [29] Magnhild Nicolaisen and Kirsten Thorsen. 2017. What are friends for? Friendships and loneliness over the lifespan—From 18 to 79 years. *The International Journal of Aging and Human Development* 84, 2 (2017), 126–158.
- [30] Patrick B O'Sullivan and Caleb T Carr. 2018. Masspersonal communication: A model bridging the mass-interpersonal divide. *New Media & Society* 20, 3 (2018), 1161–1180.
- [31] Andrew Phelps and Mia Consalvo. 2020. Laboring Artists: Art Streaming on the Videogame Platform Twitch. In *Proceedings of the 53rd Hawaii International Conference on System Sciences*.
- [32] Tyreal Yizhou Qian, Jerred Junqi Wang, James Jianhui Zhang, and Laura Zhenqiu Lu. 2020. It is in the game: dimensions of esports online spectator motivation and development of a scale. *European Sport Management Quarterly* 20, 4 (2020), 458–479.

- [33] Stephen D Reicher, Russell Spears, and Tom Postmes. 1995. A social identity model of deindividuation phenomena. European review of social psychology 6, 1 (1995), 161–198.
- [34] Leonard Reinecke and Sabine Trepte. 2014. Authenticity and well-being on social network sites: A two-wave longitudinal study on the effects of online authenticity and the positivity bias in SNS communication. Computers in Human Behavior 30 (2014), 95–102.
- [35] Richard Ryan. 2009. Self determination theory and well being. Social Psychology 84, 822 (2009), 848.
- [36] Jo Anne SIREY, Martha L BRUCE, George S ALEXOPOULOS, Deborah A PERLICK, and Steven J FRIEDMAN. 2001. Perceived stigma and patient-rated severity of illness as predictors of antidepressant drug adherence: On stigma as a barrier to recovery. Psychiatric services (Washington, DC) 52, 12 (2001), 1615–1620.
- [37] Max Sjöblom and Juho Hamari. 2017. Why do people watch others play video games? An empirical study on the motivations of Twitch users. Computers in human behavior 75 (2017), 985–996.
- [38] Anselm L Strauss. 1987. Qualitative analysis for social scientists. Cambridge university press.
- [39] John Suler. 2004. The online disinhibition effect. Cyberpsychology & behavior 7, 3 (2004), 321–326.
- [40] Rachel Thompson. 2020. Tumblr's new mental health initiative provides tools and support during coronavirus pandemic. <https://mashable.com/article/tumblr-ditch-the-label-mental-health-initiative/>
- [41] Jeffrey W Treem and Paul M Leonardi. 2013. Social media use in organizations: Exploring the affordances of visibility, editability, persistence, and association. Annals of the International Communication Association 36, 1 (2013), 143–189.
- [42] Jirassaya Uttaraong, Jie Cai, and Donghee Yvette Wohn. 2021. Harassment Experiences of Women and LGBTQ Live Streamers and How They Handled Negativity. (2021).
- [43] Sonja Utz. 2015. The function of self-disclosure on social network sites: Not only intimate, but also positive and entertaining self-disclosures increase the feeling of connection. Computers in Human Behavior 45 (2015), 1–10.
- [44] Patti M Valkenburg and Jochen Peter. 2009. Social consequences of the Internet for adolescents: A decade of research. Current directions in psychological science 18, 1 (2009), 1–5.
- [45] Barry Wellman and Milena Gulia. 1999. Virtual communities as communities. Communities in cyberspace (1999), 167–194.
- [46] Donghee Yvette Wohn. 2019. Volunteer moderators in twitch micro communities: How they get involved, the roles they play, and the emotional labor they experience. In Proceedings of the 2019 CHI conference on human factors in computing systems. 1–13.

Received July 2021; revised September 2021; accepted October 2021