Mental Health Live: An Ethnographic Study on the Mental Health of Twitch Streamers During COVID

Kelli N. Dunlap  
Marie Shanley  
Jocelyn Wagner  
American University  
Mxiety  
American University

INTRODUCTION

The intersection of mental health and streaming is as old as web-broadcasting itself. From the earliest days of Jennicam to current Twitch streams, streamers (i.e., live web broadcasters) have used their broadcasting platform to connect socially with others and share personal mental health experiences. Furthermore, streamers have been vocal about the impact of streaming on their mental health, citing parasocial relationships; community toxicity, harassment, and abuse; and the management of mental health crises in-stream as frequent sources of distress and negative psychological impact.

Streaming is a 20+ year old medium but interest in the mental well-being of streamers has only come recently. In the late 2010’s, games journalism began to run articles about the stressors and mental and physical impacts of streaming on streamers. These articles largely consisted of interviews with famous streamers who shared their personal experiences of intense stress and burnout due to the demands of streaming. Kotaku, Wired, and PC Gamer have all run exposés featuring headlines, “Facing burnout, stress, and health issues, top Twitch streamers are taking extended breaks”; “YouTubers, Twitch streamers are opening up about serious burnout, personal struggles”; “What it takes to play video games for a living: Insane hours and tons of stress”; “Twitch streamers are burning out from acting as shrinks to their fans.” In terms of scholarly work, streamer mental health has been examined through the lens of affective (emotional) labor involved in live streaming, the affordances of being a streamer with chronic health issues including mental illness, and the impact of microcelebrity and influencers discussing their own mental health on streams.

Streamer Stressors and Mental Health

Despite some recognition and discussion of the impact of streaming on streamer mental health in public, academic, and personal spaces, the vast majority of research on mental health in streaming has focused on viewers, rather than streamers. Given the parasocial relationship between streamer and viewer, however, viewer-centered research can also be helpful in understanding the unique stressors faced by streamers. For example, Twitch, the most popular livestreaming platform, is frequently used by viewers as a way to find emotional support and social connection online. Community and belongingness are core motivations for Twitch viewers and their engagement with a streamer and the surrounding community plays a larger role in stream viewership than content being streamed. Perceived closeness of the streamer-viewer relationship is the strongest predictor of whether a viewer will financially support a streamer. These viewer motivations suggest that streamers who are willing to engage in the social-emotional labor aspect of streaming (see Ruberg & Cullen, 2019 for more) may be more likely to create and retain viewers, especially those that contribute financially to the streamer.
Since the COVID-19 pandemic began, Twitch communities have provided an essential social service by keeping people connected. Increases in depression, anxiety, loneliness, and reduced social support are common adverse mental health impacts experienced during COVID-19\textsuperscript{18–20}. However, social bonding through collective gatherings has been shown to provide protective psychological effects in times of tragedy and crisis\textsuperscript{21–23}. Wholly because of streamers, Twitch communities continue to be able to provide opportunities for bonding, group gathering, processing of shared pain and emotion, and social support despite social distancing and lockdown procedures. Typically, the role of organizing and facilitating collective gatherings in the wake of tragedy falls to interpersonal networks (e.g. friends, family members, community networks) and public agencies\textsuperscript{21}. In streaming, however, the weight of supporting and holding space for a community containing hundreds to thousands of individuals falls on the shoulders of a precious few individuals, namely the streamer and, if lucky, a small group of volunteer moderators. Ultimately, the stability and effectiveness of online streaming communities to be able to provide psychologically protective and supportive environments depends on the mental health and wellness of the streamer.

In order to have a better understanding of why, even before COVID, Twitch streaming communities frequently served as places for peer mental health support and crisis intervention, it’s important to first examine the current state of mental health and mental health services in the United States.

**Mental Health in the U.S.**

Prior to the COVID-19 pandemic, 7.7 million (16%) American children and 47 million (19%) American adults met diagnostic criteria for at least one mental illness\textsuperscript{24,25}. Despite the prevalence of mental illness in the U.S. population, the majority of those experiencing mental illness do not receive therapeutic intervention\textsuperscript{26}. On average, only 43% of those who meet criteria for a psychological disorder obtain treatment\textsuperscript{24}.

In August 2020, after five months of social distancing and lockdown, the Center for Disease Control (CDC) reported the prevalence of anxiety and depression—the two most common types of mental illness\textsuperscript{26}—was three and four times higher, respectively, compared to the same time period the previous year\textsuperscript{27}. Between January 2020 and September 2020, the number of people seeking help for anxiety rose 634% and the number seeking support for depression rose 873%\textsuperscript{28}.

Not only are more people experiencing symptoms of mental illness, they’re also experiencing greater severity. As of September 2020, 80% of people who completed a screen for depression or anxiety scored in the moderate to severe range of symptom severity\textsuperscript{29} compared to 60% in 2017\textsuperscript{28}. Suicidality is also at an all-time high; 37% of distressed individuals report having suicidal thoughts almost every day with the highest rates reported by LGBTQ+ youth\textsuperscript{29}. The shortage of mental health providers pre-COVID was already problematic, serving only about 25% of those who requested services\textsuperscript{30}. Although the shift from primarily in-person to nearly 100% telemedicine has reduced geographical and proximity barriers to treatment\textsuperscript{1}, there are not nearly

\textsuperscript{1} One of the most significant barriers to treatment is accessibility. 77% of counties in the United States have a shortage of mental health providers. Rural areas are particularly underserved as
enough providers to meet the pre-COVID need for services, much less the massive increase in need since March 2020.

Given the general shortage of mental health professionals, the significant systemic barriers to treatment (e.g. cost, insurance, location, stigma; Andrade et al., 2014), and the predictable yet still alarming spike in requests for mental health services, it is not a surprise that people seek and find non-traditional resources, like streamers and streaming communities, for mental health support.

**Streaming, Mental Health, and COVID**

As discussed above, the intersection of mental health and streaming has been generally present since the mid 1990s and “officially” recognized by the creation of a searchable “mental health” tag on Twitch in 2018. Prior to tags, Twitch had a “community” feature to help users find like-minded streamers and their communities, one of which was Cast Together -- a group of more than 20 Twitch streamers open and willing to talk about their own mental health experiences.

These are just a few examples of the ways in which, prior to the pandemic, Twitch and its community was attempting to accommodate the use of the platform as a place for mental health education and discussion.

As of April 2019, Twitch reported 4.2 million active streamers on the platform and 889 million hours of content viewed that month. In April 2020, the numbers skyrocketed to 7.2 million active streamers and 1.8 billion hours watched. This massive increase in engagement on Twitch is attributed to the majority of the US population being under stay-at-home orders and other lockdown measures such as the cancellation of professional sporting events.

It is unclear how this spike in viewership impacted streamer well-being. For example, more people at home and more hours spent viewing could mean rising numbers in a streamer’s chat. However, the economic impact of the pandemic may also lead to less financial security and less ability to donate, subscribe, or otherwise monetarily support a streamer. An increase in the number of streamers may mean more competition (perceived or actual) and the potential for increased self-imposed pressure to stream more often or for longer hours. Additional stressors may include increased frequency of emotionally charged in-chat conversations, death of community members, or a greater perceived responsibility for the mental health and well-being of community members. These are important questions this research paper seeks to address.

**METHODS**

**Participants**

Sixty-two Twitch streamers completed the initial screen for inclusion in the study. Screening questions gathered information about streaming frequency as well as how long they have been streaming. Inclusion criteria required streamers to be active currently as well as prior to the pandemic to allow for comparison between pre-COVID and COVID streaming experiences. Ten participants did not meet criteria for inclusion and were removed from the study. Of the 52 participants included in this study, 65% of non-metropolitan counties do not have a single psychiatrist and 47% do not have a licensed psychologist.
participants who met criteria, 23 responded to direct contact from researchers and scheduled an interview. Four participants did not show up during the scheduled time and did not respond to follow up. In total, 19 participants completed interviews between September 18 - October 15, 2020. See Table 1 for demographic breakdown.

Materials

<table>
<thead>
<tr>
<th>Table 1. Participant Demographics</th>
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<tr>
<td><strong>Gender</strong></td>
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<td>Non-binary</td>
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<tr>
<td>Women</td>
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<td>Men</td>
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<tr>
<td><strong>Streaming Experience</strong></td>
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<td>1-2 years</td>
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<td>2-3 years</td>
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<td>3+ years</td>
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<tr>
<td><strong>Streaming Frequency</strong></td>
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<td>3+ times per week</td>
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<td><strong>Average Follower Count</strong></td>
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Materials included a brief screen for inclusion criteria, the use of Zoom teleconferencing software, a prepared set of semi-structured interview questions, and an automated transcription service to generate a transcribed document. Interview audio was recorded and used to create a transcription of the interview.

Design & Procedure

The study was reviewed by the American University Institutional Review Board (IRB) and deemed as exempt from IRB oversight due to the low-risk nature of the study. Participants were recruited via Discord and Twitter and asked to complete a brief inclusion screen. Participants who did not meet criteria were thanked for their time, removed from the study, and had their information deleted. Qualifying participants were contacted individually by a member of the research team and scheduled for an interview over Zoom.

Researchers abided by best-practices in ethical research by providing participants informed consent at the beginning of each interview. Each recording was then transcribed using an automated transcription service and then compared to the audio recording by the research team to ensure accuracy and to remove any potentially identifying information (e.g. names of specific streamers, identifying statistics such as number of followers or streaming schedule). Once the transcription was reviewed, the audio file was deleted to ensure the anonymity of each participant.

A qualitative methodology was used to systematically approach and gain insight into the rich and complex life experiences of streamers. Each transcript was thoroughly read and reviewed for topics, themes, ideas, and patterns of meaning related to streamer mental wellness. Relevant text segments from each transcription were identified and given a code which generally described the feeling or idea expressed by the text. Codes were analyzed and used to generate broader themes.

FINDINGS

Thirty-two unique codes were identified through analysis of the transcripts. Codes were analyzed to generate 4 broad themes (summarized in Table 2) plus an additional category focused solely on requests for resources (summarized in Table 3). In the following section, each theme is
explored in depth and supporting statements from interviews are included utilizing an anonymized alpha-numeric label (i.e. K4, M1).

Table 2. Streaming During COVID: Summary of Four Major Themes

<table>
<thead>
<tr>
<th>Theme</th>
<th>Description</th>
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<tr>
<td>Theme 1</td>
<td>Streamers playing the role of front-line mental health crisis intervention during COVID</td>
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<tr>
<td>Theme 2</td>
<td>Streamers struggling to balance the wellbeing of their community and their own mental health</td>
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<tr>
<td>Theme 3</td>
<td>Streamers feel unsupported and unprepared for the mental health issues they are managing in their stream</td>
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<tr>
<td>Theme 4</td>
<td>Streamers and streaming communities are resilient</td>
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**Theme 1: Streamers playing the role of front-line mental health responders during COVID.** The refrain “I’m not your therapist” is a common one in streaming, from off-handed comments on Twitter to industry panels and discussions on the topic (e.g. TwitchCon 2016, PAX Online 2020). This phrase refers to viewers who join a chat and attempt to use the space for therapeutic purposes (e.g. venting intense emotional distress, crisis management, expressing suicidal ideation, etc.). However, as discussed above, viewers routinely seek out streamers and community spaces where they feel a sense of connection, belongingness, and psychological safety, and pandemic restrictions have only intensified the need for these kinds of community connections.

Throughout the interviews, streamers noted an increase in their Twitch chats and private Discord channels regarding this kind of community engagement. They reported seeing more real-life content coming up in chats and many noted increases in sharing personal struggles, such as emotional difficulties or financial troubles. Despite frequently voicing the sentiment “I’m not your therapist,” many streamers disclosed they felt responsible for maintaining the health and well-being of viewers in their streams. K3 described it as, “A lot of people use you as a tool to help them deal with whatever they're going through, just by watching. You don't have to be a therapist to be, to have empathy… or remind somebody that they're not alone.” Similarly, many streamers expressed feeling the need to be on and available for the needs of the community at all times. J3 summarized, “You're leading a community, you're leading people, and so you have this responsibility to help them to be around for them,” and J2 put it even more succinctly, “I'm here for my community, we're gonna get through this together.”

Streamers repeatedly stated that they are not mental health professionals and that there are topics or situations that can come up in chat that require professional attention. Compared to pre-COVID, streamers shared that the frequency of these events – ones which prompt the streamer or moderation team to connect a viewer to professional services – increased during quarantine.

This increase in frequency and intensity reported by streamers mirrors the experience of mental health professionals during COVID. The demand for mental health services increased 52% since the start of the pandemic and, much like streamers, therapists have been struggling to meet the demand. Additionally, like therapists, streamers are holding space for an on-going trauma that
they themselves are experiencing in real time. Comments made by streamers are often uncomfortably similar to comments made by mental health professionals speaking to the experience of being a therapist during COVID.

**Theme 2: Streamers struggling to find balance between the well-being of their community and their own mental health.** Difficulty finding balance between the demands of streaming and the demands of offline life is not new for streamers, however COVID seems to be posing additional and unique challenges. Most of the streamers interviewed commented on the need to find balance between their own mental wellness and the wellness of their community. The differentiation between needs of the self and needs of the community created tension, especially in those who expressed feeling responsible for maintaining the health and well-being of their community. Several streamers mentioned feeling like they had to mask their own mental health struggles to appear “strong” for their communities. M1 vividly described the experience: “Oh God, it feels like there's a lot of pressure to not be a human being and just be an entertainer, I feel like any time I have any sort of an emotional reaction on the stream, I'm just supposed to hide it because all my viewers need a distraction and I'm supposed to be that distraction.” This sentiment of needing to be “always on” and present a cheery front was directly called out by 53% of participants.

Several streamers stated they had taken time off from streaming or adjusted their schedules to be less intense as a way to manage their mental health.

**Theme 3: Streamers feel unsupported and unprepared for the mental health issues in stream.** Whether a streamer intends to address mental health issues on their stream or not, viewers use stream chats to get educational, social, and psychological needs met. Streamers are frequently a touchpoint for persons managing a mental health issue, from feeling disconnected or lonely to struggling with symptoms of mental illness. Streamers expressed feeling ill-equipped to handle the increased frequency and intensity of mental health topics and concerns occurring in their streams, chats, and communities. Even streamers whose content focused on mental health and who identified as mental health advocates described feeling a sense of unease and self-doubt, and expressed a strong desire for guidance. In addition to frustration was a prevalent sense of feeling overwhelmed and unsupported in terms of mental health resources as all interviewees expressed a desire for more mental health education, information, and resources.

**Theme 4: Streamers and streaming communities are resilient.** Social gatherings facilitate bonding and enhance cohesion and social identity – a “coming together” effect that provides mutual support during times of crisis. Collective gatherings, especially public ones, during or following a tragedy amplify solidarity within a community by providing a venue for socially acceptable outpouring of emotion, acknowledging that the tragedy is a collective grief rather than an individual loss, and reminding community members that they are not alone in their grief. Each stream is a public-facing collective gathering for members of a community and contains the ingredients required for fostering solidarity during difficult times. Some streamers view their role in the pandemic as one providing distraction and entertainment, yet their streams and chat still allow viewers the opportunity to feel connected, bonded, and not isolated in their sadness or grief. There is also evidence to suggest that maintaining regular activities, such as a regularly scheduled stream, can be helpful. “While one may find it difficult to continue with mundane
everyday activities, these activities bring people together, promote solidarity, and enhance recovery.”

In addition to the comfort and normalcy of scheduled streams, larger-scale events such as fundraising streams or live-streamed memorials reinforce traditional rituals for coping with grief and loss; “ritual reaffirms community.” Rituals for processing grief, from family funerals to the 2017 Women’s March, help individual pain be processed as a collective experience which then can evolve into a sense of solidarity, pride, hope, and resolve, which are the foundations of resilience and recover. During the interviews, J5 shared a particularly striking example of this principle in action. In mid-2020, one of J5’s moderators died by suicide.

“We put a memorial service together for her… we literally held it in Animal Crossing. We were just running around on Animal Crossing on an island, having a memorial service because I think that closure is really important and grieving and all that, and with COVID and stuff like we can't go to funerals and it's not like we were all close enough with her family… it would have felt intrusive to ask for an invite to the Zoom funeral and stuff like that, so we just did our own thing.”

**IMPLICATIONS FOR IMPROVING STREAMER MENTAL HEALTH**

One of the explicit goals of this research project was to develop a “streamer wish list” — a collection of requests and suggestions for improving the mental wellbeing of streamers. All participants were asked what mental health resources they use most frequently while streaming or in their streaming communities and what resources they wished were available. Seventy-four statements were coded as requested resources and clustered around three topics. (See Table 3 for summary).

| Request 1 | Make sharing and connecting to resources easier for everyone. Streamers largely do their own legwork putting together resources for their community and educating themselves about mental health. The majority of participants stated they curate their own set of links, websites, and hotlines. One major obstacle in accessing and sharing resources is a perceived lack of those resources. Many resource requests, from mental health tip sheets to therapist directories, already exist but not in a space where streamers know to look. For example, the TwitchCares document, which is hosted by Twitch and provides dozens of links to mental health information and resources, was largely unknown to the streamers. As M1 stated, “I had no idea that the TwitchCare page existed, I kind of wish that maybe that was more visible.” |
| Request 2 | Alternatives to hotlines and links |
| Request 3 | More psychoeducation, training, and professional support |
**Recommendation:** Continued collaboration between Twitch and mental health organizations across the spectrum; coordination between smaller, game- and streaming-specific orgs and large mental health entities to create and promote content relevant to streamers on a national platform; increase the visibility of TwitchCares and subsequent mental health resources (e.g. platform-wide chat commands that refer to reliable mental health resources and services).

**Request 2. Alternatives to hotlines and links.** As K3 eloquently stated, “Everybody's kind of tired of just being sent to a website or to a phone line.” There is a strong desire for more personal and warm hand-offs between streamers and viewers; streamers want to know viewers and community members are being taken care of. While referral to emergency hotlines is the correct course of action when someone is in crisis, the majority of incidents streamers reported revolved around viewers who were in need of supportive, more long-term services, and whom a crisis hotline is not appropriate.

Navigating the mental health system in the United States is difficult and the effort to find services can be herculean. The mental health marketplace is made excessively complicated by the variety of clinicians (e.g. psychologist vs psychiatrist vs LPC vs MSW, etc.), inaccessibility due to the lack of parity in mental health insurance (if you’re lucky enough to have insurance that pays for mental health at all), and all of the accessibility and availability issues mentioned at the start of this paper.

The abysmal state of the mental health system is not within the purview of Twitch or streamers to solve, but it is what streamers are reacting to when they express frustration at not being able to connect viewers to services.

**Recommendation:** Platforms establish partnerships with local, state-level mental health organizations, especially those that provide free or reduced-cost services; expand and amplify less-known mental health resources such as warmlines and peer-support organizations; on sign-up (or upon reaching Affiliate or Partner), email each streamer a list of mental health partner organizations where they can find additional support.

**Request 3. More psychoeducation, training, and professional support.** Most streamers mentioned wanting some kind of workshop or other ongoing didactic training on a variety of mental health streaming topics such as coping with harassment and ethically talking about mental health on stream. These resources would focus on improving the skills of the streamer, enabling them to be competent and confident in a range of abilities, from providing appropriate resources to acting as a mental health advocate. Streamers also expressed significant interest in connecting with mental health advocates and professionals in order to check in with and ask for advice around mental health and streaming issues.

Programs providing didactic training and mental health mentorship for streamers have begun to pop up, though not without significant limitations or ethical concerns. For example, some programs limit their services to partnered streamers only, thus excluding the vast majority of streamers. Other programs keep trainings and resources behind paywalls similar to continuing education credits or are an LLC that charges for peer-support sessions. While there isn’t anything inherently unethical about a business limiting or charging for services, it does create
barriers (e.g. financial, status, etc.) – largely the same barriers that make accessing mental health care so challenging.

Some streamers have begun to fill in the gap themselves. Most are self-described mental health advocates, individuals who have undergone some level of training or have a background in mental health and provide educational streams focused on discussing mental health topics. There are also several streamers who are licensed mental health professionals who stream on Twitch and integrate their expertise into their streams. However, if a streamer holds advanced degrees or licensure in mental health, uses those credentials as part of their streaming brand, and then also engages in providing professional individualized opinions on stream, then the likelihood of misunderstanding, misrepresentation, and risk of harm to viewers is high.

“If it even comes across in the media, or in a video session like Dr. Phil that what you’re doing is therapy, that’s potentially a problem because you're misconstruing or misleading people into thinking that this entertainment situation is actually representative of what mental health professionals do.”

For example, it would be ethical for a psychologist on a television show to talk about symptoms of depression and provide general recommendations for treatment, such as seeing a therapist, speaking to their physician, exercising, etc. However, it would not be ethical for a psychologist to interview someone on air and make recommendations about their specific depression, provide a diagnosis, or suggest a specific course of treatment (e.g. seek cognitive behavioral therapy, obtain a prescription for Zoloft). The same holds true for mental health professionals on Twitch.

Unfortunately, some streamers openly dispense medical advice on stream, such as diagnosing their guests or making specific treatment recommendations. This is especially dangerous coming from someone who presents themselves as a mental health professional because, despite all disclaimers, they are perceived as an authority. Even off the clock, mental health professionals have an ethical obligation to avoid causing harm and comport themselves in line with the ethical guidelines.

**Recommen**dation 3: Platforms should collaborate with reputable, non-profit mental health organizations as well as experts in curriculum development to create openly accessible webinars, trainings, and educational content that strengthens streamers’ skills and competencies in managing the variety of mental health situations that occur in stream; collaborate with recognized and accredited mental health services that specialize in peer-support to develop peer counseling programs; partner with recognized and accredited peer-support providers and embed access to these programs within the platform itself using in-chat commands; accredited mental health organizations should develop initiatives with the purpose of reaching out to the streamer community and provide evidence-based education and training around mental health basics and peer support; Twitch should avoid partnering with or promoting mental health professionals who attempt to provide therapy, therapeutic services, or medical advice on-stream due to ethical concerns and risk of harm.
CONCLUSION
Live-streaming has been a means for discussing mental health issues for over two decades. These conversations are driven by streamers, some of who intentionally create and produce mental health content while others simply respond to mental health issues if/when they arise during a stream. Prior to the pandemic, the mental health of streamers was a topic of interest and frequently categorized as, “stressed,” “burned out,” and “exhausted.” Since the pandemic, there has been a spike in engagement on Twitch and it is unclear how the pandemic and subsequent shift in viewership has impacted streamers’ mental health. Overall, streamers have reported more engagement in their streams, especially in-chat discussion of significant “real life” issues faced by their community including financial, social, and emotional stressors. This study sought to understand the impact of the pandemic on streamer mental health.

Based on the findings, it is clear that Twitch streamers are experiencing a wide range of stressors which are occurring with greater frequency and intensity compared to pre-COVID times. Stressors include financial instability, loss of income opportunities, death of community members, perceived increase in demands on their time and emotional resources, more emotionally-charged community interactions, and a sense of needing to “be there” or “put on a strong face” often at the expense of their own well-being. Streamers are frequently finding themselves in situations similar to that of mental health first responders; directing people in crisis to appropriate resources, facilitating discussions about emotionally heavy topics, and providing social support to members of their community. Unfortunately, many streamers do not have the needed training or knowledge of resources to manage these situations and feel overwhelmed, anxious, and unprepared. Streamers largely feel isolated in terms of their role as leaders in that they have a responsibility to care for their communities but lack their own support systems.

There is a serious and significant disconnect between the mental health resources that currently exist and streamers’ awareness of these resources and an urgent need for improved communication and promotion of existing resources, whether that be via outreach campaigns or through Twitch directly.

Overall, the themes uncovered in this research emphasize the need for improved education, communication, and support around mental health and mental illness.

Limitations
Given the exploratory nature of this study, it is important to interpret the findings within the context of their limitations. First, the pool of potential participants who met criteria shrank by half between screening and scheduling, resulting in a final interview pool of 19 streamers. This may influence the data in a variety of ways, such as those most interested in mental health, those who currently manage a mental illness, or those most impacted by COVID potentially being more likely to respond. A second limitation was gender distribution. Twitch streamers are predominantly men whereas participants in the study mostly identified as women. However, this gender split is common in caring professions and reflects similar demographic differences in the mental health field. Third, the study was cross-sectional, meaning participants were interviewed only once rather than on multiple occasions over time (i.e. longitudinal), and therefore is reflective only of current circumstances and cannot be extrapolated to explain past experience or predict future outcomes.
Future research
The scope of this study was small and exploratory; like many studies on the effects of COVID there is a lack of research regarding the minutiae of mental health in various fields, especially those of live-streaming and entertainment. As such, the study focused on a small but stable sample size, one that could yield trends in data without interviewing the majority of streamers on Twitch. Future studies could expand on this research, both by including more streamers of all genders, ethnicity, ages, and abilities as well as exploring the themes found within the study as they relate to various groups of streamers.

Additionally, many of the streamers interviewed in this study are women and/or LGBTQIA+ individuals, two groups that face additional challenges while streaming, including bias, discrimination, and hate speech\textsuperscript{50,51}. While these interviewees did note some changes in behavior while streaming during COVID, both positive and negative, the specific effects of streaming during COVID on gender and sexuality lie outside of the scope of this study. Additional research should be done on the effects of the global crisis on the mental health of female and LGBTQIA+ streamers, including the frequency and intensity of harassment, availability and awareness of specialized resources, and the efficacy and efficiency of information dissemination.

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