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Hope Smith

University of Tennessee at Chattanooga, ymd792@mocs.utc.edu

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Algorithms and the Alphabet Mafia: How TikTok Influenced Gender, Sexuality, and the
LGBTQ+ Community During the COVID-19 Pandemic

Hope Arianna Smith

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The University of Tennessee at Chattanooga
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Dr. Natalie Blanton
Assistant Professor of Sociology
Thesis Director

Dr. Marcia Noe
Director of Women, Gender
and Sexuality Studies
Department Examiner

Dr. Heather Palmer
Professor of English
Department Examiner

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ABSTRACT

A massive surge in popularity of the social media app TikTok coincided with the first major surge of COVID-19 cases in the United States. As U.S. Americans began leaving their houses again and the U.S. approaches a semblance of a “post-pandemic” era, many LGBTQ+ social media users, particularly TikTok users, have mentioned the influence social media had on understanding their queer identity. This study seeks to contribute to a larger field of research into how social media is affecting identity development in adolescents and young adults. This study employs an anonymous online survey to ask undergraduate students at the University of Tennessee at Chattanooga: (1) if the TikTok platform provided a noticeable sense of connection to a community—queer or not, (2) if users questioned or understood their identity differently during the pandemic, and (3) if the content they viewed and interacted with on TikTok influenced their understanding of their gender or sexual identity. Both heterosexual and queer respondents used TikTok frequently during the pandemic and felt more connected to the LGBTQ+ community by using TikTok. This study’s respondents tend to notice the influence of TikTok content on their understanding of their sexuality but less so on their understanding of their gender identity. Even if their identity did not change during the pandemic, many respondents developed more nuanced understandings of their own gender and/or sexuality.

INTRODUCTION

In February and March 2020, TikTok became the most downloaded app with over 2 billion downloads, and between February and June 2020, the smartphone application had the most downloads of any app in a single sales quarter in history (Hiebert and Kortes-Miller 2021). This explosion in the platform's popularity coincided with the first global recognition of the COVID-19 virus as a pandemic. During this timeframe, the United States began enacting precautionary measures to COVID-19, including mandatory and advisory stay-at-home orders depending on the state or territory, social distancing measures, and mask requirements in public spaces (Moreland, Herlihy, Tynan et al. 2020; CDC 2021). These measures left millions of U.S. Americans isolated in one place, sometimes with family, roommates, or alone. TikTok, like many other social media platforms have in the past, created a space for people to connect, create a community, and share ideas (Zhang 2020). However, previous research has indicated that gender and sexual minorities—the LGBTQ+ community—especially employ social media to build communities with others like them (Cavalcante 2019; Bates, Hobman, and Bell 2020; Craig and McInroy 2014; Lucero 2017), now including TikTok (Hiebert and Kortes-Miller 2021). Many young individuals in the LGBTQ+ community have reported that social media platforms have played a role in their process of identity formation (Bates et al. 2020; Hiebert and Kortes-Miller 2021; Oakley 2016; Lucero 2017). This study seeks to analyze the use of TikTok during the COVID-19 pandemic with a focus on gender and sexual minorities and how young adults assess the role of TikTok in their identity formation and understanding. The subsequent literature review begins by discussing the relationship between LGBTQ+ youth and social media and the associated benefits and risks. Then, existing models of identity formation will be discussed to provide context to this discussion of identity formation. Finally, the literature review

will finish with a discussion of social media algorithms, looking at TikTok's algorithm in depth, and the potential harm algorithms may perpetuate.

LGBTQ+ YOUTH AND SOCIAL MEDIA

Previous research on LGBTQ+ individuals' relationship with the internet, especially social media, have highlighted four major themes: (1) a sense of acceptance and community, (2) access to resources, (3) the internet's growing role in the coming out process, and (4) sexual and gender identity development.

(1) Studies about various social media platforms have noted that queer youth oftentimes feel more accepted, supported, and safe in online communities compared to their offline communities (Bates et al. 2020; Hiebert and Cortes-Miller 2021; McInroy, McCloseky, Craig, and Eaton 2019). As a social minority, establishing a strong community can be quite important for their well-being and social adjustment. Due to various risks associated with being a sexual or gender minority (SGM) that will be discussed in depth later, a supportive, nonjudgmental circle can prevent serious consequences and potentially impact the course of someone's life.

Furthermore, queer youth are more inclined to interact with and participate in a LGBTQ+ community online and do so more often than offline (McInroy et al. 2019). Interacting with a queer community in-person can put LGBTQ+ youth in potentially dangerous situations.

Although offline communities are not immune from risk, queer youth in previous research feel a sense of safety online that they do not experience as often or as much offline. Queer adolescents can focus more of their time and energy on engaging with the people they share identities and experiences with and less of it on exercising caution due to their SGM identity. In fact, some LGBTQ+ youth in Hiebert and Cortes-Miller's (2021) study claimed that they only felt connected to the queer community through TikTok, indicating the importance and reach of the

queer community on the platform. Additionally, SGM youth claim to have more online friends, particularly supportive friends, than offline friends (McInroy 2019). Although some may argue that lacking connection to an in-person queer community is harmful for queer youth, an offline community is not always possible, especially for young queer people. Furthermore, Hiebert and Cortes-Miller conducted this study during the COVID-19 pandemic, which may have impacted how connected participants feel to the queer community on other online platforms or offline. Further research is needed to see if this theme holds up outside of the pandemic. Nevertheless, online communities can benefit users' offline relationships: participants in Hiebert and Cortes-Miller's (2021) study also claimed that their queer community online provided support while navigating their relationship with family members. Persistent homophobia in many societies oftentimes makes maintaining healthy, supportive family connections difficult, but the internet's ability to connect LGBTQ+ people who have experienced family turmoil due to their queer identity for years with young LGBTQ+ people can potentially lessen the harm to familial relationships. Furthermore, social media allows people to connect with others that share an identity or interest regardless of geographic location (Bates et al. 2020). In this way, social media can be a crucial medium for connecting with a queer community for SGM that live in relatively isolated geographic locations where the only opportunities for in-person community are within a relatively small, often homogenous town or neighborhood. Furthermore, since many people spent at least a few months in lockdown or quarantine during the COVID-19 pandemic and even more time limiting their time outside of their residence around people outside their household, connecting with people beyond one's immediate surroundings became much more important.

(2) Aside from connecting with social support, studies have shown that queer youth use social media to access resources related to their identity, such as therapy, support groups, sexual

health information, and gender-affirming care (Bates et al. 2020; Craig and McInroy 2014; Hiebert and Cortes-Miller 2021). Some of these resources can mean the difference between life and death for LGBTQ+ youth, so expanded options as well as access to any resources can create positive long-term outcomes for queer adolescents that seek them. Furthermore, participants in McInroy et al.'s (2019) study claim to search for resources and information related to being queer more often online than offline. This phenomenon is especially important to recognize for mental and physiological health providers with young LGBTQ+ patients as well as non-profits and organizations focused on this socio-demographic group so that they can better serve this group. Queer youth in rural, southern, or midwestern areas are less likely to be able to access any identity-related resources at all, much less ones that are safe to access (McInroy et al. 2019). About half of the participants in the McInroy et al. (2019) study lives within urban areas in the U.S. or Canada, indicating that the other half lives in areas more likely to have limited access to resources. The authors did not distinguish between the responses of those who live in urban areas from those who live in more rural areas, but it is likely that participants in rural areas sought out resources more often online, which may have influenced the type and magnitude of benefits they received from engagement with queerness online compared to those in urban areas.

(3) Although coming out is not necessarily essential for LGBTQ+ people, coming out can be important for positive psychological health by allowing integrated sexual activity and desire as well as openness about one's identity (Bates et al. 2020). It is not the process of coming out, however, but how coming out allows one to live that benefits mental health. Being open about one's identity helps eliminate a sense of shame about one's identity and the fear of it being discovered. Craig and McInroy (2014) found that some queer adolescents are now coming out digitally before coming out offline. Although coming out online often does not substitute coming

out offline—unless one’s online community is the same as their offline one, queer youth can use internet spaces almost as testing spaces so that they can see what it would be like to come out with presumably less potential for risk. Furthermore, online spaces have features distinct from offline spaces that make identity expression more appealing or comfortable for users including asynchronous communication, 24/7 connectivity, and a sense of anonymity or pseudonymity (Davis and Weinstein 2017). Users can choose to engage with a discussion, community, or another user at any point without having to wait for the other party or parties to become available for interaction. Also, they only must share as much or as little about their personal identity as they feel comfortable whereas offline spaces allow for assumptions and observations about a person’s identity in face-to-face communication, which can be quite beneficial when one is new to or still uncertain about their identity. Therefore, they can explore identities that they learned about online before claiming those identities in an offline space (Craig and McInroy 2014). Experimenting with one’s gender or sexual identity in one’s everyday life or exploring an identity new to one that might fit one is oftentimes very dangerous and difficult. Since online spaces are generally safer to come out on, queer youth can essentially come out as a different identity than what they previously understood themselves to be without having to explain themselves to everyone they know. Before online spaces became intertwined in the identity development process, one’s outward presentation and internal sense of identity could be quite incongruent, and often still are in offline spaces before coming out (Brandon-Friedman and Kim 2016). For example, a gay man may recognize that he is a gay man internally but portray himself as a straight man externally. Nevertheless, online queer communities offer somewhat of a fix for that: closeted queer adolescents can still express their internal identity, just online, while maintaining a safe persona around others offline.

(4) However, youth can explore and develop their gender and sexual identity in online spaces without having to come out. LGBTQ+ internet communities can help queer youth form their SGM identities through interacting with seasoned members of the LGBTQ+ community, identity-related materials, and a combination of the two in coming out stories posted online (Craig and McInroy 2014; Hiebert and Cortes-Miller 2021). Some of the participants in these studies claimed that learning about what clarified someone else's identity for themselves clarified their own identity. On the other hand, some queer youth claimed online materials like the Lesbian Masterdoc helped to form one's sexual identity. Neither people nor resources online tell queer adolescents what their identity is; instead, they offer insight from those who have figured out their identity years beforehand to hopefully offer a mirror to young LGBTQ+ people. Youth could likely access similar information offline, but the internet's allowance for users to be able to conceal pieces of or their entire identity online allows youth to feel more comfortable exploring their identity (Bates et al. 2020). Trying to engage with the queer community offline always poses the risk of closeted youth being caught or exposed. Many online spaces only share the information about oneself that one chooses to present. Also, some youth argued that they did not have external influences, such as homophobic ideology and judgment from peers, during the COVID-19 pandemic to alter their personal perceptions (Fish, McInroy, Pacey, Williams, Henderson, Levine, and Edsall 2020). Queer youth could not only curate how they presented themselves but also curate who could have access to and comment on that curated presentation. Youth could hide from their offline peers and connect with peers online for better self-understanding.

Risks to LGBTQ+ Well-Being

The LGBTQ+ community, especially queer youth, are vulnerable to various risks related to their SGM identity that makes online spaces more appealing.

Queer people who have not come out yet are always at risk of being outed. LGBTQ+ people in high-risk offline situations can face harassment or employment discrimination if their online identity is connected to their offline identity (Bates et al. 2020). All the benefits of anonymity and pseudo-anonymity described above only work if the level of anonymity is maintained. Although workplace discrimination based on sexual orientation may not seem very common in recent years, gender minorities such as transgender individuals remain subject to discrimination and harassment, which is projected to only worsen due to transphobic legislature and erasure efforts from school boards across the U.S. Even if those hiring at the workplace do not discriminate against a transgender individual, their coworkers still pose a risk of harassment.

LGBTQ+ youth are at a higher risk of negative mental health outcomes than non-queer youth, including low self-esteem, depression, self-harm, drug misuse, and suicidal thoughts and behaviors (Fish et al. 2020; McInroy et al. 2019; Brandon-Friedman and Kim 2016). While a supportive family, peer support, a connection with an accepting adult, or even feeling belonging and acceptance in a group environment could help youth mitigate negative mental health symptoms, queer youth often do not have access to even one of these (Hiebert and Cortes-Miller 2021). LGBTQ+ youth face higher rates of conflict or even rejection among family, harassment at school, and overall hostile communities (McInroy et al. 2019). While Gay-Straight Alliances—or GSAs—can provide an offline community to support queer youth, adolescents with intersecting identities, such as being black and gay, or gender minorities, such as genderfluid, can have a difficult time trying to find a GSA that is equipped to support these youth adequately (McInroy et al. 2019). Furthermore, many physical barriers often prevent youth from accessing therapy or any mental health care (Hiebert and Cortes-Miller 2021).

However, online communities can help address some of these negative mental health outcomes. In Lucero's (2017) study almost 75% of participants reported having never experienced cyberbullying. Nevertheless, queer youth may be vulnerable to increased risky sexual behaviors: higher rates of unprotected sex are associated with searching for partners online (Hatchel, Subrahmanyam, and Birkett 2017). However, Hatchel et al. (2017) argues that insufficient research exists to substantiate the claim of increased sexual risk behaviors online. Furthermore, McInroy (2019) argues that fixating on risks associated with activity online could potentially discourage or prevent LGBTQ+ youth from accessing vital resources and social support.

Once the COVID-19 pandemic began, many new risks arose. Many queer adolescents lost access to supportive social connections and in-person resources (Fish et al. 2020). These individuals went from seeing friends that may have served as confidants about one's SGM identity almost every day, if not every day, to never. They also lost access to in-person resources like their school's GSA or an LGBTQ+ support group. Furthermore, physical distancing and stay-at-home orders were likely to restrict LGBTQ+ youth to circumstances compromising their mental health and may have increased violence, abuse, or the risk of it to queer youth (Fish et al. 2020; Hiebert and Cortes-Miller 2021). Along with the threat to mental well-being, some queer adolescents in Fish et al.'s (2020) study feared using telehealth for mental healthcare because their parents might overhear them. Thus, even though intimate connections and revelations occurred online before the pandemic, online intimacy reached a heightened use during the pandemic (Şot 2022).

Limitations of Platforms

Tumblr has been very popular among young LGBTQ+ individuals for many years; Cavalcante (2019) suggests that its popularity derives from Tumblr promoting self-expression without moderation and not requiring one to connect that expression to their real-life identity. Having to hide their identity in their everyday lives prompts queer individuals to seek out another place to express themselves, such as social media platforms. However, platforms like Facebook complicate safe spaces since it requires a verifiable, stable personhood attached to a profile. In fact, Facebook only expanded their options for gender beyond the binary in 2014. Required gender selections make it difficult for drag performers or individuals with multiple or fluid identities to express the extent of their identities (Bates et al. 2020; Cavalcante 2019). Tumblr, on the other hand, allowed users to provide nuanced descriptions of their identities through About Me pages and boxes to provide their bio for their profile (Oakley 2016). Permitting users to share their identities in their own words allows them to describe their identities as little or as much as they want to and complicate their labels beyond surface level assumptions and understandings of an identity.

Nevertheless, the queer community on Tumblr has its limitations. Some LGBTQ+ users enjoy the “queer bubble” that has been created on the platform since they do not have to explain their identity or concepts related to gender and sexuality to others (Cavalcante 2019). Although Tumblr gives the option for users to articulate their identity in detail, many queer users do not seem to feel the need to, at least to others within their communities. Instead, some users take this discussion of queerness offline, and they felt motivated to share their knowledge about gender and sexuality when their expectation of understanding was met with confusion (Cavalcante 2019). Although Cavalcante (2019) did not share whether users also felt more comfortable and confident in their identity offline or in what situations they will share their knowledge, it is

significant that online conversations carry into offline spaces. One issue users take with Facebook is that the platform promotes building new relationships formed offline but not necessarily meeting new people online (Lucero 2017). Building a queer community and a queer discourse on the platform can be quite difficult if one is not already apart of such a community or discourse offline. However, Cavalcante (2019) argues that, while Tumblr can be a queer utopia, it can also be a queer vortex. With that queer vortex comes four major risks: no long-term engagement, the possibility of an information echo chamber, increased risks of online dangers related to queerness, and Tumblr becoming increasingly commodified (Cavalcante 2019). Any online platform cannot provide a stable, permanent connection to a queer community since online platforms are constantly changing and at risk of shutting down. These communities can also make it difficult for individuals to place and understand themselves in a larger societal context, and leaving the information “bubble” can be difficult to cope with. Also, the increasing financial stake other companies have in Tumblr shapes the opportunities and affordances of the platform. For example, tags related to the LGBTQ+ community have been banned multiple times on Tumblr during Yahoo!’s acquisition of the platform in 2013 and Verizon’s acquisition of Yahoo! in 2017 (Cavalcante 2019). While the company in control of Tumblr at the times of these bans claimed that they were targeting NSFW content and that SFW queer content was accidentally included within the bans, these incidents still demonstrate the vulnerability of these communities online.

LGBTQ+ IDENTITY DEVELOPMENT

Erikson’s Identity Development

Psychologist Erik Erikson’s theories about identity development have shaped scientific and social understandings of identity development: Erikson argued that identity development was the main task of one’s adolescence (Davis and Weinstein 2017). However, Davis and

Weinstein (2017) argue that the increasing delay in society in marriage and children in pursuit of higher education and career aspirations has led psychologists to affirm that identity development extends into emerging adulthood. Identity development extending into emerging adulthood, which can be perceived as late teens and early 20s, seems logical considering ongoing neurological development during this age. As for what identity development entails, Erikson proposed the psychosocial moratorium in which individuals experiment with new aspects of their identity, receive feedback or approval from their peers, and reflect on how well the aspect seems to fit (Davis and Weinstein 2017). This feedback does not necessarily mean in-person, verbal critiques but rather includes all the ways in which peer socialization occurs—including body language, acceptance or ostracism, and content or messages on social media. However, Davis and Weinstein (2017) expand on this psychosocial moratorium, claiming that identity exploration in adolescence focuses on who an individual is among their family and peers whereas identity exploration in emerging adulthood focuses on the role an individual plays in the larger society around them (Davis and Weinstein 2017). Although this concept extension explains the increasing focus on one's personal career and goals in early young adulthood, it excludes the development of one's gender and sexuality within their broader identity.

Queer Identity Formation Models

Vivian Cass presented a popular coming out model in 1979 in which identity development requires an individual's active engagement and to share their identity with others, and Cass distinguishes private and public presentation (Craig and McInroy 2014). Cass argued that an individual experiences alienation and isolation because of identity dissonance—or one's private and public presentation differing (Craig and McInroy 2014). Her model includes a stage in which one must exercise pride in oneself as well as a stage of identity synthesis, in which one's public and private presentation align (Scroggs, Miller, and Stanfield 2018). The final stage

involves the individual incorporating supportive heterosexual people into their lives and minimizing the relevance of their identification as queer to their larger identity (Craig and McInroy 2014). Cass's model suggests that heavy focus on one's queerness within their identity indicates one's unfamiliarity or uncertainty with that aspect of their identity. Instead, individuals seemingly complete the process by understanding their queerness as a single piece of their identity and finding space in a larger heterosexual society.

In 1994, Anthony D'Augelli proposed the Lifespan Model of Lesbian, Gay, and Bisexual Identity Development, asserting identity is a set of processes without a particular order occurring throughout one's lifetime, which differs from Cass's stricter model (Scroggs et al. 2018). Almost opposite to Cass's model, D'Augelli's model includes an individual's exit from heterosexuality and an entrance into the queer community (Scroggs et al. 2018). Abandoning one's presentation as heterosexual is a key element of both models, but D'Augelli cites membership in a queer community as a requirement rather than a role in heterosexual society.

Many of these early models of queer identity only focused on queer sexuality, but in 2004 Arlene Istar Lev theorized Transgender Emergence, describing the process as an individual becoming aware of their gender identity, seeking information and resources, coming out to loved ones, exploring social and medical transition, and culminating in identity integration and pride (Scroggs et al. 2018; Lev 2004). Like early queer sexuality models, Lev lists identity integration as a necessary final stage.

In 2011, Jonathan J. Mohr and Matthew S. Kendra proposed the Lesbian, Gay, and Bisexual Identity Scale (LGBIS) as a revision of the original Lesbian and Gay Identity Scale from Mohr and Ruth Fassinger in 2000 (Brandon-Friedman and Kim 2016). The revised scale included 8 subscales to measure the development of sexual minority identity: identity uncertainty,

internalized homophobia, identity affirmation, acceptance concerns, identity superiority, concealment motivation, identity centrality, and difficult process (Brandon-Friedman and Kim 2016). The LGBIS focuses on similar stages to Cass and D'Augelli's models such as how central one's sexual minority identity is to their overall identity and how one perceives those of their queer identity compared to how one perceives those of the sexual majority, but it also highlights the individual's motivations and concerns about their identity presentation throughout the developmental process.

However, these models have received criticism for not acknowledging the socio-cultural context in which individuals live (Craig and McInroy 2014). As Davis and Weinstein (2017) have claimed, an increasingly important task in identity development involves an individual understanding their role within a larger society. However, individuals do not reach an understanding about their place in society without consideration of how other aspects of their identity are perceived by the culture around them and do not always reach a positive conclusion about their role. For example, a brown queer undocumented immigrant in the U.S. will likely have a much different queer identity development process than a white middle class U.S. citizen because what roles they are allowed or feel permitted to occupy in society are shaped by their race, citizenship and documentation status, and socioeconomic status amongst other factors.

Thus, recent literature on identity development oftentimes applies theories to understand queer identity development rather than attempting to contain individuals' experiences to existing models. One such theory is minority stress theory, which argues that stressors unique to a minority identity contribute to negative health, social, and academic outcomes (Saha, Kim, Reddy, Carter, Sharma, Haimson, and Choudhury 2019). Saha et al. (2019) applied the minority stress model to LGBTQ+ Reddit users' posts to understand how queer stigmatization may impact

the mental health and well-being of LGBTQ+ individuals, which correlates to multiple scales in the LGBIS, by highlighting prejudice events—explicit rejection on the basis of one’s queer identity, perceived stigma and internalized fears and expectation of rejection due to one’s identity, and internalized queerphobia, or internalized negative societal views of LGBTQ+ identities (Saha et al. 2019). The minority stress theory offers additional insight where other development models cannot because the theory can easily be expanded to examine other marginalized identities and focuses on the impact one’s sociocultural context has on them.

Uses and Gratification Theory (UGT) is especially helpful for beginning to understand sexual and gender minority identity development in an increasingly online environment. The theory proposes that people actively seek out content or resources that meet their needs and provide satisfaction (McInroy 2019). Many identity models assert that an intentional exploratory stage or period occurs in the developmental process, but UGT can help social scientists better understand how social media can modify queer identity development in adolescents and emerging adults and the role of algorithms.

Social Media Changing Development Process

Social media often provides what Bates et al. (2020) calls master narratives or sociocultural templates that can benefit adolescents in forming and understanding their identity, queer or not. For LGBTQ+ adolescents specifically, they can access others’ experiences with and explanations of their gender or sexuality with relative ease, which can help adolescents identify themselves more easily or learn how to cope more effectively with minority stressors or challenging developmental stages. Unfortunately, however, it can also provide easy access to harmful narratives and stereotypes about queer people, which can cause distress or hinder their developmental process.

Furthermore, whereas previous research suggested that adolescents would experiment and then make a choice about their identities, participants in more recent studies such as Bates et al. (2020) suggest that they alter their external presentation of identity once they understand their identity internally. Bates et al. (2020) argue that their results demonstrate Social Transition Machinery Theory, proposed by Oliver Haimson in 2018, which argues that social media sites facilitate life transitions. In other words, social media sites allow adolescents to mentally process their identity without physical experimentation and then help them integrate their identity—online and offline, externally and internally, public and private—more easily.

Previous theories and models acknowledge that identity development is a social process consisting of more than just the individual; Lucero (2017) argues that social media has provided a plethora of new social arenas in which individuals' experiences occur. Thus, identity development theories need revision or restructuring to account for the new dominant social space for understanding one's identity. However, some of the early research into social media's role in queer identity development have found that many social media sites lack specific identification fields for users to fill out for their profile, unlike the historically binary categories of male and female on Facebook, which makes it harder for researchers to collect hard data on identity construction (Oakley 2016). TikTok is a social media platform that does not require users to give any identifying information about themselves. Although this feature, or lack thereof, complicates data collection and updated understandings on identity development, this feature appeals to and serves the larger LGBTQ+ community by allowing users to claim less common labels, identify in their own words, and not feel forced to either out themselves or assume a different identity marker.

ALGORITHMS

In the context of social media sites, algorithms are a set of rules that have been coded into the platform by the company that owns the website. There are two main objectives of algorithms or filters employed on social media sites, and both essentially shape and control what content various users can see. A primary purpose includes filtering out offensive language in text or in videos—by converting the spoken word of videos into text for the algorithm to process—as well as nudity in images (Southerton, Marshall, Aggleton, Rasmussen, and Cover 2020). Platforms have a public list of community guidelines or terms of service that users must abide by, and algorithms will flag content for further review by a moderator or completely remove the content if it determines that content does not adhere to the site’s rules of conduct (Southerton et al. 2020). Users can also report content for review by the company if they believe that it does not adhere to community guidelines. Platforms implement this type of algorithm or filtering primarily to protect users from potential harm although some argue that some platforms have ulterior motives for this censorship, which will be discussed later.

The other main purpose of algorithms is to curate content shown to users to provide a satisfying experience on the platform by making it easier to access what users might want to see and interact with. Platforms create an algorithmic identity or data double of users, which John Cheney-Lippold described as “a digital version of a user that is constructed entirely of their trace data” (Simpson, Hamann, and Seamaan 2022). In other words, algorithms determine what to show users based on what a user clicks on, likes, comments on, and engages with and who they follow (Simpson et al. 2022). The “trace data” websites collect is essentially how users behave on the site and what content they respond to. However, algorithms do not always seem to make a distinction—or are not capable of doing so—between content users respond to positively and

content they respond negatively to. For example, a user may comment on or share another user's post to reject or argue against the content, but algorithms may interpret them sharing the video as evidence of liking the content. As algorithms have improved over time, an algorithmic crystal framework offers insight into what modern algorithms seek to accomplish: algorithms have become personalized to the user and interact with a user's identity to reflect to the user a multi-faceted, dynamic representation of their identity (Lee, Mieczkowski, Ellison, and Hancock 2022). Seeing users as complete, three-dimensional people allows algorithms to understand users beyond the concept that a user interacted with this content so they must want to see more of it. Modern algorithms, such as the algorithm employed by TikTok, seem to make connections between different aspects of a user's identity and place content in front of them that is relevant to them on a more individual level. These algorithms also construct perspectives on other users by reflecting parts of a user's identity back to them from the creator's post (Lee et al. 2022). An algorithm finds content to show a user by noting when other users' content represents an interest or characteristic of the original user and presenting it to them. Exposing people to others' perspective by linking what they have in common has promoted education on online social platforms. Online educational platforms have challenged traditional education and altered the learning and teaching process (Zhang 2020). Instead of the traditional format of a singular, older, formally educated teacher providing information to a group of younger people without much of their input, online platforms allow for people of all ages, education levels, and socioeconomic statuses to participate in a more discussion-based, individualized educational experience, which helps to decrease the education gap caused by socioeconomic status (Zhang 2020). However, Savolainen (2022) argues that little information is known about algorithms on a larger scale and understanding them would require one to have specialized knowledge. Thus, what most people

claim to know about algorithms is derived from “folklore” they have absorbed or what they have observed, which can lead to unfounded worries or ignorant optimism about algorithms (Savolainen 2022).

The Shadow Ban and Platform Agendas

One instance of algorithm fears mixing with the lack of public knowledge of algorithms is the panic around shadow bans. The term “shadow ban” was originally coined in 2001 and referred to websites hiding original posts from everyone but the original poster of the content (Savolainen 2022). However, the definition of shadow banning commonly used on online platforms and in offline discussions of platforms differs from the original. During the early 2020s, social media users conceive the shadow ban as the platform allowing content to remain visible to other users while users experience a decrease in interaction with and praise of their content compared to their previous content, which users assume is a result of the platform’s algorithm showing their content to other users less often (Savolainen 2022). Despite how frequently users on various platforms, especially TikTok, have theorized about and claimed shadow banning of their content, platforms deny the existence of shadow banning (Savolainen 2022). Savolainen (2022) asserts that many social media users believe that the growth rate of their platform and their follower count should experience a positive linear trajectory. Thus, when growth suddenly halts or slows down, users assume that the platform has shadow banned them. However, one could argue that instead the user’s more recent content does not appeal to an audience beyond their current following or is not as entertaining or engaging as their previous content and other creators’ current content. Furthermore, platforms suggest that any content restriction or content being hidden derives from the company’s concerns with consumer safety and satisfaction (Savolainen 2022). Algorithms hiding or removing content due to threatening or harmful content is a valid objective of platforms and coincides with algorithms’ primary purpose

of filtering out dangerous content. However, many users have argued that their content is not offensive or dangerous in any form and that this restriction may exist due to the personal biases of the platforms' owners and stockholders. Many TikTok users claim that the platform limits the reach of and hides content produced by LGBTQ+ creators and creators of color despite the platform claiming to promote creative expression (Simpson et al. 2022). No concrete studies prove that this phenomenon occurs, but a platform such as TikTok should take these accusations seriously, nonetheless, considering their claim of encouraging self-expression. If these platforms are suppressing the voices of marginalized communities, then these companies are reproducing the same systemic oppression these groups face offline in an online space. Users have started crafting methods of dodging the algorithm. For example, some Instagram users have modified how they present themselves on the platform so that the platform does not label their account as a bot—a computer-operated account—or a scammer with users claiming that Instagram's algorithm is hypersensitive (Savolainen 2022). These users believe that Instagram's algorithm incorrectly penalizes or removes accounts that belong to real people who only seek to express themselves, which can have serious consequences on what users can gain from their social media use. Especially for the queer community, feeling compelled to alter how they present themselves online can hinder their access to community, resources, identity development, and identity integration.

Therefore, it is necessary to consider what the intentions are behind platforms' actions, or more specifically the intentions of the companies' leadership. Savolainen (2022) claims that people hold normative interpretations of how algorithms work and that those perceptions may differ from the intentions of the algorithm and platform's designers. Nevertheless, platforms will publish statements and guidelines about what their intentions are with their algorithms, yet they

do not share explicit information on how their algorithms operate and what developers have coded algorithms to look for. In fact, some users have accused algorithms of reinforcing discrimination while simultaneously making it more inconspicuous (Southerton et al. 2020). For instance, assuming the practice of shadow banning occurs, platforms promote the content of majority groups to more users while restricting the visibility of content created by minority groups, yet platforms like TikTok can claim content made by minorities violates its community guidelines, such as a queer creator creating “sexual” content when talking about their sexuality or a Black creator promoting “violence” when discussing police brutality. Southerton et al. (2020) asserts that these classification systems lack transparency and judge minority groups in terms of the dominant norms. In other words, platforms have not provided their users with clear, in-depth information as to what algorithms and filters highlight and target, leaving users to only hypothesize. Therefore, when minority groups see a sudden decline in engagement with their content when discussing or depicting topics related to their marginalized identity, it is a logical assumption that the platform perpetuates the same oppression minorities face offline. For this reason, Southerton et al. (2020) argues that online classification systems function as a form of discrete online governance and controls the way in which LGBTQ+ individuals specifically can be sexual citizens. Algorithms govern online spaces in that they determine what is and is not allowed, and algorithms are discrete in that their “laws” so to speak are not publicly available. This algorithmic governance penalizes queer people online by deciding what expressions of sexuality are appropriate and inappropriate without a detailed explanation of why their expression is labeled in such a way. Aside from sexual, gender, and racial minorities, users also claim that TikTok does not promote old or plus-size creators or creators whose surroundings appear “dirty” (Simpson et al. 2022). TikTok’s developers seemingly perpetuate ageism,

fatphobia, and potentially classism or mental health stigma. Instead, by promoting the opposite— young, slim, wealthy, and healthy creators, TikTok amplifies and platforms the dominant norm of what people should aspire to be, which also includes being heterosexual, cisgender, and white assuming the censorship of LGBTQ+ people and people of color. Furthermore, Simpson et al. (2022) claims that platforms create an algorithmic identity primarily to serve industries and investors rather than the individuals using the platforms. The platform collects data more so to improve advertising and marketing of different products or industries to users rather than to improve the experience of users on the platform according to the researchers. If so, this concept lends further credibility to the idea of shadow banning since industries and investors seek to promote a certain aesthetic or lifestyle to consumers in hopes of a profit. Thus, the platforms they give money to will promote the dominant norm of a successful, desirable person and life.

The TikTok Algorithm

TikTok's algorithm operates in weights and sequences according to Zhang (2020): the first stage of the proper sequence prioritizes how often a creator receives likes, comments, and shares on their video as well as the ratios of each of these elements compared to each other. The second stage of the sequence looks for how well a creator engages with trends; the platform then promotes increased traffic on a creator's content after successfully proving themselves in a sense to the algorithm (Zhang 2020). Thus, creators that produce more niche content or appeal to a niche community must include mainstream or trending elements within their content to gain clicks and traction on their content through the algorithm (Zhang 2020).

Nevertheless, TikTok's algorithm is generally held in much higher regard than other social media platforms' algorithms. For example, participants in Lee et al.'s (2022) study claimed that the TikTok "For You" page contained much more variety in content than

Instagram's "Explore" page. These participants asserted that the Explore page displays almost exclusively the same genre or type of content after a user clicks on that type of content more than once (Lee et al. 2022). While a user's multiple clicks may mean that they would like to see more of that content, these users argue that they become inundated with the same content until oversaturation and that the platform does not reflect their variety of interests back to them. Furthermore, the Explore page takes a long time to adjust to a users' changing interests, which users contrasted to how the For You page adapts to changing interests and multiple interests quite quickly (Lee et al. 2022). These participants did not specify how quickly or slowly each platform adapts to their interests, but they display a clear preference for and appreciation of TikTok's more efficient algorithm. In fact, some users praise TikTok's algorithm for seemingly remembering a user's older interests along with their present interests by showing videos aligning with their older interests alongside videos aligning with their current interests (Lee et al. 2022). Since these participants also shared the frustrated sentiment about the Explore page, it is likely that these videos of older interests do not consume a very large portion of the content shown on users' For You page. Instead, TikTok's algorithm almost makes users feel connected to the algorithm in that it "remembers" more niche details about users from their past.

Accordingly, many users have also discussed how TikTok's algorithm promotes a sense of connection and community. Once users get deep enough into communities on the platform—i.e., they see videos with less views and likes on their For You page, they feel more important and more connected to not only that creator and their content but also a larger community around that topic (Lee et al. 2022). Şot (2022) argues that users perceive a greater capability of promoting community on TikTok compared to other social media platforms and, thus, feel more inclined to use the platform more frequently in comparison to other platforms. Users conceive

TikTok as more intimate due to their perception of personal control over the algorithm in comparison to their perceived lack of control over other platforms' algorithms, much like with Instagram's Explore page (Şot 2022). In other words, users feel like they can shape their experience on TikTok quite easily while impacting their experience on the Explore page feels quite challenging.

Furthermore, people can obtain the benefits of a sense of belonging without even creating content on TikTok. The algorithm shows viewers content that the algorithm determined relatable to the user in some fashion, which fosters a connection between the viewer and the creator and their content (Lee et al. 2022). Even though the creator does not always know or engage with these viewers, the viewers still feel a connection because a piece of the creator's expressed identity resonates with the viewer. Connection could also likely come from interacting with and reading the comments of other viewers who also resonated with the creator's video. Furthermore, participants in Simpson et al.'s (2022) study felt like their use of and experience on TikTok validated their queer identity, and some felt more motivated to continue and increase their use of the app due to seeing their identity represented in others—much like individuals feel encouraged to use the app due to feeling a community connection. As discussed earlier, validation from any source can be difficult to find for LGBTQ+ individuals, especially for adolescents and offline. TikTok specifically, oftentimes used by younger generations, can fill that lack and provide that identity support for queer youth and young adults. Some participants in Lee et al.'s (2022) study claimed that their own perspective of themselves shifted due to the content and information presented to them by the algorithm on TikTok. Since algorithm transparency is almost nonexistent, it is quite difficult to study how TikTok's algorithm might impact individuals'

identity, especially queer identity, development and how the content the algorithm puts in front of users may shape how users view themselves.

Nevertheless, user feedback concerning TikTok's algorithm was not completely positive. Although TikTok generally reflected an accurate depiction of a user's identity, the algorithm sometimes interpreted aspects of their identity differently than what the aspect means to the user (Simpson et al. 2022). For example, a participant in Simpson et al.'s (2022) study claimed that TikTok showed her content surrounding anti-vaccination beliefs, which she believes the algorithm showed her due to her identity as a mother, but she does not hold anti-vaccination beliefs. Furthermore, some users never felt fully comfortable exploring TikTok because they feared that viewing or interacting with content that they did not like would lead to the algorithm suggesting more of that type of content, which some users referred to as "messaging up" their For You page (Simpson et al. 2022). Although this limitation does not necessarily ruin the potential impacts and enjoyment derived from the app, it prevents users from getting the most out of the platform. This hesitation is largely in response to what Simpson et al. (2022) refers to as a common domestication challenge: users must devote time to teaching the TikTok algorithm what the individual user likes by interacting with content enough to provide enough data so that the algorithm can curate an enjoyable For You page. Users claimed that the domestication process can vary between a few hours to even an entire month (Simpson et al. 2022). Due to the time investment required to make the recommended experience on TikTok enjoyable, it makes sense why many users would hesitate to risk losing that investment when they are not guaranteed to like the content that they search for. Also, they may fear losing connection with a community or creator that they discovered on the platform. While online platforms specifically for queer people exist, queer individuals have carved out a space for themselves on the mainstream app TikTok

(Hiebert and Cortes-Miller 2021), which makes disconnection from the LGBTQ+ TikTok community particularly intimidating. The LGBTQ+ community is one of many on TikTok, and re-embedding oneself in that community on TikTok would likely require a decent time commitment for domestication. Furthermore, some queer users worried about the privacy of their data on TikTok (Simpson et al. 2022). If their personal data regarding their identity as LGBTQ+ was shared to other parties that the user did not consent to sharing that data with, the platform can put queer users in danger and risk outing them. Although the study did not specify how secure this data is, the fear still shapes how some users engage with the platform.

METHODS

To test the impact of TikTok on undergraduate students in relation to gender and sexuality during the COVID-19 pandemic, I created an anonymous online survey. Responses were collected between November 3, 2022 and February 17, 2023. Respondents were sampled through recruitment materials approved by the Institutional Review Board at UTC, and the approved IRB protocol number for this research is IRB # 22-103. Introduction to Women, Gender, and Sexuality Studies classes during the Fall 2022 and Spring 2023 semesters at the University of Tennessee at Chattanooga were visited by the researcher and given a brief oral presentation about the purpose of the study while a recruitment poster including a QR code to the survey was passed around the classroom. An anonymous link was also shared with the professors of these classes to be posted on their Canvas—their online course platform—and shared with absent students. In addition, the anonymous link was emailed out to the entire WGSS program to sample students not in those classes during the two semesters. Finally, the researcher posted recruitment materials on her personal social media profiles of Instagram, Twitter, and TikTok

along with an anonymous link. Both of the latter sampling methods included IRB-approved verbiage similar to that used in the oral presentations.

Sample

I used snowball sampling when distributing the survey, thus the population is largely students within the Women, Gender, and Sexuality Studies program and similar individuals in the researcher's community. Respondents had to be 18 years or older to take the survey and must have attended a college or university during the time frame the study examines—March 2020 through 2022. Although these sampling procedures do not allow the researcher to generalize to a very large population, they are appropriate for the scale of this study.

A total of 103 responses were collected. 96 of those responses indicated qualification for the survey and answered at least one of the Likert scale questions. Incomplete responses were included if they attended university between 2020 and 2022 and answered at least one Likert scale question. 92 participants were enrolled at UTC during the study's examined time frame, 3 were enrolled at another college or university, and 1 participant did not answer. In an effort to be representative and inclusive, respondents were given multiple options to identify their sexuality and gender identity. Bisexual was the most reported sexuality with 36 respondents, and straight was the second most common with 34 respondents. The other options were as follows: 13 queer, 8 questioning, 7 lesbian, 3 gay, 3 asexual, and 1 respondent chose other, identifying as pansexual. There were 105 total options chosen, meaning that some respondents chose multiple labels but not very many. For gender identity, the sample overwhelmingly consisted of cisgender women with 73 respondents. The other options were chosen as follows: 9 nonbinary, 7 questioning, 5 cisgender men, 3 genderqueer, 2 transgender men, 2 agender, 2 gender fluid, 1 transgender woman, and 2 identified as other, 1 identifying as a non-binary woman and the other

identifying as a demi-girl. 106 gender markers were chosen in total. Finally, participants could also select multiple options for race to represent all aspects of mixed-race respondents' identity. 81 respondents identified as white, 14 Black or African American, 4 Asian, 3 Hispanic or Latinx, and 1 Native Hawaiian or Other Pacific Islander. 103 race markers were chosen in total.

Measures

In the online survey, hosted on the Qualtrics platform, participants were asked a series of questions to collect data on the demographics of the sample as well as if they are eligible to participate in the survey based on their enrollment in an undergraduate program during the study time frame. Demographic information collected includes the school attended during the time frame, sexuality, gender identity, and race. The rest of the survey consisted of Likert scale questions to measure the following variables.

i. Sense of Community

Participants were asked if they had a supportive, accepting community before the COVID-19 pandemic, during, and now—or when the respondent took the survey—on a scale of strongly agree to strongly disagree.

ii. Sexuality and Gender Identity Formation

Participants were asked three scaled questions to understand their sense of their gender and sexuality throughout the examined period. Participants were asked if they questioned either identity before the pandemic, during, and now on a scale of strongly agree to strongly disagree. The following questions were asked regarding gender and sexual identity separately. The survey inquired if the participant's understanding of their sexuality or gender respectively changed over the course of the pandemic on a scale of strongly agree to strongly disagree, and the final question was formatted the same except that it inquired about one's chosen label.

iii. TikTok Usage and Impact

The final section of the survey focuses on TikTok—both participants' usage and perceived effects. The first question measured participants' engagement on TikTok during the pandemic on a scale from every day to never through the means of using, commenting, sharing, stitching or dueting, and creating original content. The next question measured participants through the same time scale and engagement methods but focused on their interaction with content related to gender and sexuality during the pandemic.

The final three questions inquired about the participants' perceptions of outcomes from using the app. Participants were asked if they felt like TikTok connected them to an LGBTQ+ community and a non-LGBTQ+ community before the pandemic, during, and now on a scale from strongly agree to strongly disagree. The participants were asked if the content they engaged with on TikTok influenced their sexuality and gender respectively on a scale from strongly agree to strongly disagree.

Data Analysis

The results from this study are analyzed by means of descriptive analysis due to the limits of a thesis project. However, results from this study could later be analyzed through relevant statistical models. Results were analyzed based on the responses of all 96 respondents as well as on only the responses of non-heterosexual respondents.

RESULTS

Before the pandemic, 43.01% (40) of respondents somewhat agreed to having a supportive, accepting community. Now, 51.09% (47) of respondents strongly agreed to having a supportive, accepting community. Although most respondents still agreed to having a supportive,

accepting community during the pandemic, a smaller percentage agreed compared to the other time frames—31.52% (29) strongly agreed and 34.78% (32) somewhat agreed.

Participants strongly disagreed with questioning their sexuality and/or gender before the pandemic with 28.74% (25) when considering each option on its own. However, over 50% of participants agreed to questioning before the pandemic with 26.44% (23) strongly agreeing and 25.29% somewhat agreeing (22). Among non-heterosexual respondents, 67.24% (39) agreed to questioning before the pandemic while only 10.34% (6) strongly disagreed. All three options were also most common during the pandemic, but strongly agree led by almost 10 percentage points with 32.18% (28) of respondents and 44.83% (26) of queer participants. Now, 29.89% (26) strongly disagree to questioning, and 22.99% (20) of respondents somewhat agree or neither agree nor disagree each. Among non-heterosexual respondents, the results are similar with 27.59% (16) of participants somewhat agreeing and 20.69% (12) of participants both strongly agreeing and strongly disagreeing each. 57.30% (51) of respondents agree that their understanding of their sexuality changed over the course of the pandemic. However, 31.82% (28) of respondents strongly disagreed that their understanding of their gender identity changed, and 28.41% (25) somewhat agreed. Among non-heterosexual respondents, 50.85% (30) agreed that their understanding of their gender identity changed whereas 22.03% (13) strongly disagreed. 59.55% (53) of respondents disagreed that the label they used for their sexuality changed over the course of the pandemic, and 59.09% (52) strongly disagreed that the label for their gender changed. Among non-heterosexual respondents, 50.00% (30) agreed that the label they used for their sexuality changed over the course of the pandemic, and 46.67% (28) disagreed—making it an almost even 50-50 split. 44.07% (26) of non-heterosexual respondents strongly disagreed that that the label for their gender identity changed, but 22.03% (13) somewhat agreed.

68.24% (58) of respondents used TikTok every day during the pandemic, and 21.18% (18) used TikTok almost every day. 27.06% (23) of respondents never commented on TikTok videos during the pandemic, but the rest of the respondents were relatively evenly distributed across the other responses except for commenting every day (4.71% - 4). 69.41% (59) of respondents shared TikTok videos almost every day or every day during the pandemic. 69.41% (59) of respondents never stitched or dueted TikTok videos, and 42.35% (36) of respondents never created original TikTok videos. 58.82% (50) of respondents viewed content related to gender and/or sexuality on TikTok almost every day or every day during the pandemic whereas this was true for 71.19% (42) of non-heterosexual participants. 51.76% (44) never commented on this content, 90.59% (77) never stitched or dueted this content, and 85.88% (73) never created original content related to gender and/or sexuality during the pandemic. 38.98% (23), 86.44% (51), and 81.36% (48) of non-heterosexual respondents reported the same for these three activities respectively. 29.41% (25) never shared this content during the pandemic, but respondents were relatively evenly distributed across the other frequency options. All options for the frequency of sharing this content during the pandemic were relatively evenly distributed for non-heterosexual respondents.

32.94% (28) neither agreed nor disagreed that TikTok connected them to an LGBTQ+ community before the pandemic, and 21.18% (18) strongly disagreed. 65.88% (56) of respondents agreed that TikTok connected them to an LGBTQ+ community during the pandemic—74.57% (44) of non-heterosexual respondents, and 50.59% (43) of all respondents, and 59.32% (35) of non-heterosexual respondents, strongly agreed that TikTok connected them to an LGBTQ+ community now. 30.59% (26) of respondents somewhat agreed that TikTok connected them to a non-LGBTQ+ community before the pandemic, and 29.41% (25) neither

agreed nor disagreed. The results changed by only a few respondents during the pandemic. Respondents responded almost the same for now as well, but responses are slightly more evenly distributed. 40.00% (34) of respondents somewhat agree, 20.00% (17) strongly agree, and 18.82% (16) strongly disagree that the content they viewed, interacted with, or created on TikTok during the pandemic had an effect on their understanding of their sexuality. Among non-heterosexual respondents, 27.12% (16) strongly agree and only 10.17% (6) strongly disagree. 31.76% (27) of all respondents strongly disagree and 24.71% (21) somewhat agree that the content they viewed, interacted with, or created on TikTok during the pandemic influenced their understanding of their gender identity. 20.34% (12) of non-heterosexual respondents strongly disagreed whereas 49.15% (29) agreed that TikTok content factored into their understanding of their gender identity.

DISCUSSION

A significant percentage of respondents claimed a supportive, accepting community before the pandemic, during, and now. Despite what studies like Fish et al. (2020) and Hiebert and Cortes-Miller (2021) suggested, respondents in this study did not appear to lose vital social connections or experience extreme isolation from confidants. Nevertheless, some respondents experienced a loss of social support based on the slight decrease in the percentage of agrees during the pandemic.

While questioning one's gender and sexual identity was common among respondents, especially queer respondents, throughout the examined period, it occurred at a higher rate during the pandemic, reflecting popular discourse that the COVID-19 quarantine permitted and possibly encouraged increased self-reflection and identity exploration. Accompanying that questioning was understanding since almost 60% of respondents regardless of sexuality agreed that the way

they understood their sexuality changed over the course of the pandemic. Although one's label or perceived identity may not have changed, many respondents still at the very least developed a more nuanced comprehension of their own sexuality. If other studies replicated these results on a larger scale with a sample representative of a larger population, it would suggest either a larger societal shift toward perceiving sexuality as more of a spectrum than a binary or a benefit of a more complex sense of self derived from increased personal time and decreased social and work time—as was the experience for many during the pandemic. However, the results were not as affirmative in terms of gender identity. Respondents—overall as well as only queer—reported a changing understanding of their gender identity at a lower rate than with their sexuality, but about half of queer respondents still agreed that their perception of their gender changed. Nuanced gender compared to nuanced sexuality is most likely less popular due to the long history and institutionalization of the gender binary in the U.S. specifically; mainstream discourse surrounding gender expansiveness is only a phenomenon of recent years. Accordingly, individuals who have already identified their sexuality as not heterosexual are more likely to be comfortable with other forms of queerness such as being transgender, nonbinary, gender fluid, etc. In other words, their sexuality already alienates them in a sense from the dominant culture as part of the LGBTQ+ community, so it makes sense for them to have more comfortability with the other potentially alienating aspects of their identity that fall within the LGBTQ+ community. Furthermore, respondents who identified as a sexuality other than heterosexual before the pandemic often disagreed with questioning their sexuality during and now, yet these same respondents often agreed with questioning their gender during and now, which lends support to the conclusion that LGBTQ+ individuals are more likely to embrace a nuanced sense of gender or a gender identity other than cisgender.

Over 80% of respondents used TikTok frequently during the pandemic, and only 2 respondents never used the app during the pandemic, which reflects the explosive increase in TikTok usage during the pandemic, especially by young adults. Interestingly, almost 60% of all respondents and over 70% of LGBTQ+ respondents frequently viewed content on TikTok related to gender and/or sexuality during the pandemic. It makes sense that so many queer respondents viewed this content frequently considering how the TikTok algorithm works. However, cisgender heterosexual respondents sharing a similar experience with TikTok is interesting since they do not share that queerness in their identity, at least in terms of sexuality and gender. Nevertheless, many of this study's respondents come from students in a women, gender, and sexuality studies class, students majoring in that program, or students personally known by the researcher who majors in that program. Thus, these respondents likely have a strong interest in topics of gender and sexuality, so the TikTok algorithm likely recommended content due to collecting data about this interest. However, one could argue that the algorithm potentially favored LGBTQ+, gender, and sexuality related content. Despite many accusations by TikTok users that the platform engages in a form of shadow banning, the frequency of exposure to this content, particularly during the quarantine period of the pandemic, across gender and sexual identities could indicate a bias toward this content or a larger societal trend. Future research is necessary to understand what, if any, biases the TikTok algorithm perpetuates and what motivates developers to include those biases whether implicit or explicit. Regardless, the present study's results only suggest that the algorithm correctly reflects the likely interests of users.

Furthermore, both heterosexual and queer respondents rarely engaged publicly with any content, including gender and sexuality related content. Viewing and sharing behavior also similarly mimicked each other likely due to both activities being private or intentionally shared

with loved ones. Future research should ask respondents about whether they used TikTok with a personal, identifying account or an anonymous account. If most respondents used personal accounts, public engagement with gender and sexuality content poses the threat of being outed and both online and offline harassment since offline connections could connect the behavior to one's real identity. Nevertheless, respondents also did not participate in public engagement with other content topics, so some other reason likely explains this phenomenon, which could still potentially involve the level of anonymity on a user's account.

Before the pandemic, the majority of respondents either strongly disagreed or chose neither in regard to TikTok connecting them to an LGBTQ+ community. Due to the drastic change in popularity of the app during the pandemic, these responses might be due to respondents rarely or never using the app during this time frame. However, about 30% of respondents somewhat agreed that TikTok connected them to a non-LGBTQ+ community before the pandemic, suggesting that possibly LGBTQ+ content was not created as often, the queer community was not as popular or well-established on the app, or the algorithm suggested this content less before the pandemic. Furthermore, over 65% of all respondents and almost three fourths of LGBTQ+ respondents felt connected to a queer community through TikTok during the pandemic. Although this community connection may or may not have been strong enough to provide a supportive, accepting community to users, it at the very least promoted social connections among the LGBTQ+ community during a major period of social isolation in sometimes dangerous situations. This connection to the community has decreased in the percentage of respondents now, but over 50% of respondents still get a sense of queer connection through the app. However, only about half of the number of respondents that felt connected to a queer community through TikTok felt connected to a non-LGBTQ+ community now. A possible

explanation for this would be how people with marginalized identities tend to form community with each other more easily due to increased similar experiences whereas communities based on a shared interest, for instance, may be harder to develop a meaningful connection with.

About 60% of respondents agreed that the content they engaged with on TikTok during the pandemic influenced how they conceive their sexuality, but over 30% strongly disagreed that the content they engaged with during the pandemic influenced how they conceive their gender identity. Although non-heterosexual respondents were more likely to agree to TikTok's influence on both, they still responded relatively similarly to respondents, which helps reaffirm the persistence of the gender binary and normative understandings of gender in the U.S., at least among my study population. Still, some cisgender respondents disagreed with questioning or changing the label of their gender identity over the course of the pandemic but did agree to their understanding changing due to TikTok, yet these respondents may already be more receptive to nuanced notions about gender due to their interest in gender studies. Although many queer respondents at least somewhat agreed that TikTok content influenced their gender or sexual identity, some queer respondents that recognized their queerness before the pandemic did not agree to that influence, assumedly because they had already reflected on their identity before and did not require relative isolation or external content from TikTok to understand their identity. These respondents, however, still tended to feel a stronger connection to the queer community because of TikTok. Furthermore, some of the respondents who did not report a change in identity or understanding due to TikTok also only occasionally viewed content related to sexuality and gender. In other words, the algorithm did not show them identity-related content, so these respondents did not associate identity-related experiences with TikTok.

Limitations

Although some of the limitations of this study have already been discussed, there are additional limitations that need to be addressed. First, the survey question design could use clarification, as some vague language is utilized that potentially impacted how respondents answered questions. For example, while “before the pandemic” is commonly understood as before March 2020—at least in the United States, “during the pandemic” could be interpreted quite differently. Some respondents might only consider March 2020 through June 2020, which is when most stay-at-home orders and similar policies were in effect. Other respondents may consider March 2020 through 2021, 2022, or even the present as they were taking the survey, which could also complicate distinguishing between “during the pandemic” and “now” for the respondent. Some of the questions could have also been more specific such as if the respondent questioned their gender and/or sexuality could have asked about each individually. Also, the questions inquiring about one’s understanding do not measure how drastically one’s perception has changed.

Another major limitation is the sampling method. At most, these results could be generalized to the larger population of UTC undergraduate students in women, gender, and sexuality studies classes. Purposive sampling could have been employed to reach the student-led queer collective on campus to reach LGBTQ+ individuals in other programs at UTC. Purposive sampling also could have allowed the researcher to assemble a sample representative of the entire undergraduate population of UTC. Furthermore, the sample was predominantly cisgender, white, and undergraduate students at a public state university in a midsize right-leaning city. Also, most respondents either identified as straight or bisexual.

Albeit not a limitation necessarily, the study could have been conducted through semi-structured interviews with students on campus to understand the depth, or lack, of TikTok's impact on users and their identity, or the survey could have included more opportunities for open-ended responses aside from demographic questions.

Implications and Future Research

Although limited in the population and diversity, this study does indicate a need for future research on a larger scale of the role TikTok as a platform played in identity development during the COVID-19 pandemic. Future studies could also examine a similar research question but focus on students of color, non-cisgender students, and students from another region in the U.S. or the world. Another area for further research is a similar study but only examining cisgender, heterosexual individuals or only LGBTQ+ individuals. While heterosexual individuals were filtered out for partial analysis, this study still largely examines the responses of both groups together.

Furthermore, this study could be replicated and then expanded to be a longitudinal study. Some respondents in Cavalcante's (2019) study of Tumblr and its queer community claimed that the time and energy demands posed by going to college and their changing social environment contributed to these respondents using the platform less, claiming to learn more in "real life" than online. Future research is needed to see if the platform of TikTok maintains its influence and role in the lives of adolescents and young adults as the U.S. continues to adapt to permanently living alongside COVID-19 and the initial surge in the platform's popularity likely settles. Also, other researchers could examine if and why users who claim TikTok's relevance to their lives decline in their usage of the app as well as why and which new users are drawn to the platform and if they obtain similar benefits.

CONCLUSION

After examining the results and what meaning they carry, a common theme emerges that helps define the mass quarantine period of the COVID-19 pandemic: questioning one's identity and recognizing the full extent of one's identity. Despite previous assumptions, TikTok—its content, creators, community, and algorithm—influenced the identity formation and exploration of some, but the platform does not define, at least alone, the identity exploration that occurred during the early stages of the pandemic. Therefore, the first major question left to answer is what aspects of the pandemic, the period it occurred in, and the surrounding circumstances motivated so many individuals to explore their identity and if those conditions could be replicated to spur identity development without so many lives in danger simultaneously. The second major question left to answer is how social media has altered identity development. This study contributes to a larger field of research demonstrating that social media does, in fact, influence identity development, but future research needs to focus on how the process of developing one's various identities has shifted due to the consistent presence of social media in the lives of young people. This new or revised model for identity development needs to include not only sexual minorities but also gender minorities to fully encompass the identity development of adolescents and emerging adults. Finally, the last major question that persists involves understanding sexuality more than gender. Why do the respondents of this study at least feel more inclined to question and redevelop an understanding of their sexuality compared to their gender identity? Aside from the history and institutionalization of the gender binary in the U.S., the social isolation experienced by many during the pandemic may have also contributed to this phenomenon. Gender identity may have developed less since it often relies on the social perceptions of an individual's gender—and the potential disparity between how the individual would like their gender to be perceived—and express themselves in social settings. Sexuality, on

the other hand, does not have to rely as much on social settings. Left alone with their thoughts and desires, individuals have time to explore pleasure and attraction with presumably less social stigma. As people in the U.S., however, return to their various social settings and their accompanying influence, these questions carry particular significance to ensure that individuals of all ages have the ability and safety to understand and embrace their gender and sexual identity.

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