

## Tiktoking COVID-19 with frontline workers

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#### **Abstract**

Introduction/Objective: During the COVID-19 pandemic, frontline workers have taken to social media platforms to discuss a variety of issues that concern their personal and professional lives. In particular, TikTok's increased prominence as a social media channel has proved significant for enhancing the public presence of healthcare workers and their ability to disseminate content to a wider audience. The ways that healthcare workers use TikTok draws attention to the type of health information disseminated to the public through social media platforms. This provides the public with succinct and often visually entertaining information that may not be otherwise distributed to them directly from elsewhere. This study also provides relevant insights into how social media—TikTok in particular—can be used as a tool for disseminating knowledge about COVID-19 related topics and combatting misinformation by using the credibility of frontline workers.

**Methods:** This study collected a sample of over 2100 TikTok videos posted by healthcare workers that were coded according to the dominant overarching themes.

**Results:** The themes that arose from this sample were: (1) healthcare workers' mental health and working conditions, (2) healthcare heroes/appreciation, (3) criticism against official authorities, (4) countering misinformation, (5) humor/satire, and (6) educational content.

**Conclusion:** Due to the rise in public appreciation for frontline workers, examining the effects of the pandemic through the eyes of frontline workers has drawn attention to their lived realities in various forms. This study provided some insight into how frontline workers use TikTok to disseminate information and education to the public, often relying on their perceived credibility.

#### **Keywords**

TikTok, frontline workers, COVID-19, pandemic

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## Introduction

What distinguishes the COVID-19 global pandemic from other global pandemics in recorded human history? The answer lies within the existence of social media and the proliferation of digital information that is both helpful and detrimental to the control of the pandemic. Li Wenliang, a Chinese doctor based in Wuhan, used his social media channel on Weibo, to warn the public about the severity of COVID-19 as the Chinese government was playing it down as a common flu virus. Shortly after, Dr Li disappeared from his social media presence and eventually died from the virus, which he had risked his life to warn the public about. Social media has proved to be an

important tool for whistleblowers like Dr Li. But it can also be used to produce false information about the pandemic, mask wearing, or vaccinations, as well as xenophobia against certain groups of people who allegedly are

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responsible for the source of the pandemic. Dr Li might be one of the first frontline healthcare workers who used social media to inform the public about COVID-19, but he is not the last.

Examining the ways that healthcare workers use TikTok is not only beneficial for understanding how information is visually communicated (in one minute or less) to the public, but it also gives regular TikTok users the ability to be brought into a social sphere they may be unfamiliar with; this type of information sphere is very relevant to them due to the prevalence of COVID-19. As such, this paper brings value to digital health and the healthcare field by addressing and interpreting the innovative methods used by healthcare workers to communicate information about their lived experiences to the public through a social media platform that is rapidly rising in popularity. Identifying themes from healthcare workers' TikTok videos can provide valuable insights into how this platform is used as a tool for disseminating vital knowledge. Specifically, the study sheds light on the most common themes that healthcare workers are using in their dissemination of health-related information, which has implications for how content is visually distributed to the public through popular digital platforms like TikTok, and how these themes often deviate from mainstream news sources. As such, these themes demonstrate that social media platforms are changing the nature and strategies by which health information can be shared with the public.

The literature review below discusses peer-reviewed articles that address both the benefits and affordances of frontline healthcare workers using social media to communicate with the public about COVID-19, discuss their lived experiences and how to cope with mental health challenges during the pandemic. This literature review also includes peer-reviewed research articles which are concerned with the experiences of frontline healthcare workers.

## Tiktok, COVID-19, and the burden of being heroes

Social media platforms including Facebook, Twitter, WhatsApp, YouTube, and Instagram, have proven to be a useful tool in rapidly disseminating knowledge to healthcare workers during the pandemic.<sup>2-5</sup> However, social media can also spread misinformation about the pandemic vaccine. For example, the American Nurses Association Facebook group consists of many posts from nurses who refuse the validity and effectiveness of the vaccine. A team of Romanian researchers studied the impact of "infodemia," that is, misinformation about COVID-19, on frontline medical workers and found that "the frontline medical workers who declared to be affected by false news were significantly more stressed, felt more anxiety, and suffered more from insomnia than healthcare workers who are not affected by false information related to pandemic time."6 On a broader scale, social media can engender community panics, such as the overhoarding of basic household and medical items such as toilet papers, sanitizers or masks, which endangers not only the public needs but also the safety of frontline medical workers and COVID-19 patients.<sup>7</sup>

While there are a few studies on the use of TikTok among frontline medical workers during the pandemic, many studies have examined the public use of TikTok to stay connected online and disseminate information as well as misinformation about COVID-19.8-12 One study examines how nurses have used TikTok for three primary reasons: sharing their experiences working on the frontlines, advocating for fellow nurses, and fighting back against misinformation.<sup>13</sup> However, the main argument of this study is that social media platforms fail to unify nurses, as the process of advocacy is superficial, and the nurses' credibility has been questioned extensively, especially when there are conflicting perspectives from different nurses being promoted on TikTok. 13 In another study, the researchers analyze "331 videos from official accounts featured in the COVID-19 information hub," including "acting, animated infographic, documentary, news, oral speech, pictorial slideshow and TikTok dance."11 The common themes of these videos present "anti-stigma/ antirumor, disease knowledge, encouragement, personal precautions, recognition, societal crisis management and work report [as well as] alarm/concern emotions, COVID-19 susceptibility and severity, precaution response efficacy [which] had higher user engagement." Some of the TikTok videos contain appreciation toward frontline medical workers. While frontline medical workers have been rightfully highlighted as the ultimate heroes during the pandemic, this hero narrative is problematic to some medical workers themselves. In a Danish hospital ethnography, the hero narratives shift the responsibilities to protect the public health away from politicians, governments, and healthcare systems and place them heavily on the nursing staff, who do not believe their work as heroic but merely a duty of care. 14 These hero narratives also emphasize frontline healthcare workers as full-time heroes who care relentlessly for the patients, which, in turn, blurs the line between their job and their personal life and causes further distress for the nursing staff.

In sum, most studies have examined how social media is a useful tool to disseminate information, including misinformation, about COVID-19, which can either provide insightful knowledge about COVID-19 to the medical workers and the public or engender community panic and distrust in science and healthcare systems. From gendered perspectives, some studies, which do not focus on the use of social media, are concerned with how female healthcare workers suffer more distress and less respect for their work during the pandemic. Some studies also point out how female healthcare workers are undervalued and underrepresented as COVID-19 experts in newspaper articles. A few

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other studies explore how the public discusses frontline medical workers on social media with much appreciation for their work. And yet, the hero narratives can shift the full burden and responsibilities of protecting public health away from politicians and governments toward front-line healthcare workers themselves, which can cause them further distress. However, no peer-reviewed studies have examined how frontline healthcare workers discuss COVID-19 on social media, more specifically, TikTok. As such, this study attempts to answer the following research question:

**RQ1:** What are the major themes that frontline workers discussed in their COVID-19 TikTok videos?

## Method

To conduct our study, we selected a large number of TikTok videos using eight hashtags: "#medicalworkers," "#nurselife," "#nursesofTikTok," "#doctorsofTikTok," "#healthcareheroes," "#covidnurse," "#coviddoctor," and "#healthcareworkers." These hashtags were selected due to their relevance to the healthcare field while identifying the user's profession. Some of these hashtags are specific to COVID-19 as well, establishing the relevance of the videos to this study. To automatically collect the data, we used a TypeScript package available on GitHub to get all the available videos referencing the above terms. In total, we collected 8706 TikTok videos dated between 11 November 2019 to 12 July 2021. We commenced the search on 12 July 2021. The criteria we used for inclusion in the study include: (1) the videos are created by self-proclaimed healthcare professionals (i.e. doctors, nurses, or hospital administrators), (2) the content of the video is related to COVID-19, and (3) the textual content and the video must be in the English language. Because that the dataset as a whole is relatively large, we sampled and organized the dataset based on the number of hearts metric (similar to likes on Twitter) from the highest to the lowest because we wanted to understand which TikTok videos received the highest amount of favorable engagement by the public. As a result, we manually examined 2300 videos posted by 1346 TikTok users, and these videos received 6,275,467,611 hearts, which was done remotely in the Greater Vancouver area over the span of six months, from July 2021 until January 2022. While the majority of TikTok users only posted one video, there are a couple of users who posted over 100 videos. Also, 134 videos were later removed by the users, so the study focused on 2166 TikTok videos posted by healthcare workers. It is important to note here that we have reported some relevant metadata metrics like the frequency of plays, comments, and shares in the findings below to

offer insight into the amount of public engagement with frontline workers' TikTok videos.

## Statistical analysis

In this study, we used basic descriptive statistics, and we provide below the research procedures that we have followed. Our goal was to understand the major themes that frontline workers discuss on TikTok, and, as such, we initially inductively analyzed a sample of 244 videos from our data collected to identify the major themes. This sample was selected using random sampling strategy, and the main themes listed below emerged from these videos. In total, we found six different categories that reflect the main themes and patterns of the TikTok videos created by healthcare professionals in relation to COVID-19, as described below. These themes are exhaustive and mutually exclusive; one TikTok video can include more than one theme:

- Healthcare workers working and/or mental health: This
  theme includes posts that capture or portray the experiences of frontline medical workers during the
  COVID-19 pandemic. These posts can comprise a
  series of photos or real footage of healthcare workers'
  working conditions. They can also include confessional
  posts of healthcare workers speaking directly to the
  camera and sharing their working and mental conditions
  during COVID-19.
- Healthcare heroes/appreciation: This theme includes posts that celebrate healthcare workers, such as collective clapping, cheering, or TikTok dancing.
- 3. Criticism against official authorities: This theme includes posts that voice criticism against the federal government or hospital management systems (such as OSHA) for failing to provide healthcare workers with sufficient personal protective equipment (PPE), failing to allow healthcare workers to quarantine after they come into contact with COVID-19 patients, or to sufficiently pay healthcare workers a good living wage.
- 4. Countering misinformation: This theme includes posts that voice criticism against the public for spreading misinformation or conspiracy theories about the COVID-19 pandemic. More particularly, a large number of the posts coded in this theme raise criticism against misinformed healthcare workers who refuse the COVID-19 vaccine and/or wear masks.
- 5. COVID-19 humor/satire: This theme includes posts that are humor or satire related to COVID-19. A majority of the posts coded in this theme are related to the other categories, such as criticism against the misinformed public or conspiracists, with an added element of humor or satire.
- Educational content (handwashing, gloves wearing caution, virus accumulation on gloves, vaccine promotion): This

theme includes posts that are educational and informative about the benefits of good practices that prevent COVID-19, such as hand washing or mask-wearing, or the risk of bad practices such as vaccine refusal or anti-mask. A majority of the posts coded in this theme are related to vaccine promotion.

In order to test the codebook, two coders independently examined the above sample of TikTok videos. Intercoder reliability was acceptable in the second attempt  $\alpha \ge 0.788$ , using Krippendorff's Alpha.<sup>15</sup>

#### **Results**

To answer the study's research question on the dominant themes discussed by frontline workers on TikTok, six major themes were identified. Figure 1 provides a visual representation of these findings.

# Theme 1: healthcare workers' working and mental health conditions

Though there were different ways that healthcare workers discussed their working and mental health conditions, this theme was identified by determining if workers were discussing their work conditions and/or mental health conditions. This theme of healthcare workers' working and mental health conditions was seen at the highest frequency, where 34.5% of the videos sampled exhibited this theme. It also received the highest number of plays (n = 236,366,082) and comments (n = 437,827) as well as the second-highest number of shares from other TikTok users (n = 790,742).

Of the 785 instances of this theme in the total sample (see Figure 1), some of the videos depicted healthcare workers showing the results of wearing PPE for their elongated shifts.<sup>a</sup> Others would rely on humor to discuss their mental health conditions in their work environment, where users would contrast their reactions when completing their shift before and during the pandemic.<sup>b</sup>

## Theme 2: healthcare heroes/appreciation

This healthcare heroes/appreciation theme derives from these public displays of gratitude directed at healthcare workers, which was the third most dominant theme in this sample, with 18.2% of the overall videos (see Figure 1).

Of the 416 videos in the sample that demonstrated this theme, many relied on depictions of public support by showing parades for healthcare workers, demonstrating healthcare workers baking and distributing these goods to other healthcare workers or health facilities, and showcasing trick shots. There were also many videos posted by healthcare workers to "introduce" those that they work with. These examples are meant to show support and

gratitude for healthcare workers, which can be done through the depiction of healthcare workers as heroes or just showing appreciation for the work that these workers do for the public.

## Theme 3: criticism against official authorities

Though this theme only made up 1.8% of the sample for this project, there were various critiques categorized under this theme. It received the lowest number of shares, plays, comments, and hearts overall (see Figure 1). For example, healthcare workers would make videos calling for more PPE from public health authorities<sup>g</sup> or explaining that the Centers for Disease Control and Prevention have not supported healthcare workers enough during the COVID-19 outbreak, and criticizing who has been prioritized for vaccines. These examples are critical of those involved in the decision-making process during COVID-19, especially when the needs and working conditions of healthcare workers have been neglected.

## Theme 4: countering misinformation

This theme encompasses any information being circulated that is not true about the COVID-19 pandemic. This theme was identified in 180 posts, making up 7.9% of the sample (see Figure 1). For example, healthcare workers videos demystifying misinformation while wearing their scrubs, where they will either respond to the original posters' message by countering their message with accurate medical information. Another example is when healthcare workers respond to comments or replies to their videos with sounds from other sources to create a humorous effect.k These videos attempt to counter the ongoing "infodemic" by providing the public with accurate information or responding to messages in a satirical way. Ironically, some of the misinformation that healthcare workers debunked actually came from a few other medical professionals.1

## Theme 5: humour/satire

This theme was the second most prevalent in the sample, making up 19.8% of the TikTok content (see Figure 1). It received the highest number of shares by other TikTok users (n = 861,398) and second-highest number of hearts (n = 1,410,369,958), and the second-highest number of plays (n = 182,515,854), clearly indicating the popularity of this theme among audiences.

Many of the videos rely on satire, where healthcare workers provide a critique of their working conditions by presenting these conditions in a way that is absurd and funny.<sup>m</sup> Healthcare workers also present their working conditions in a humorous way, such as by using audio from other sources and placing it in the context of their work<sup>n</sup>

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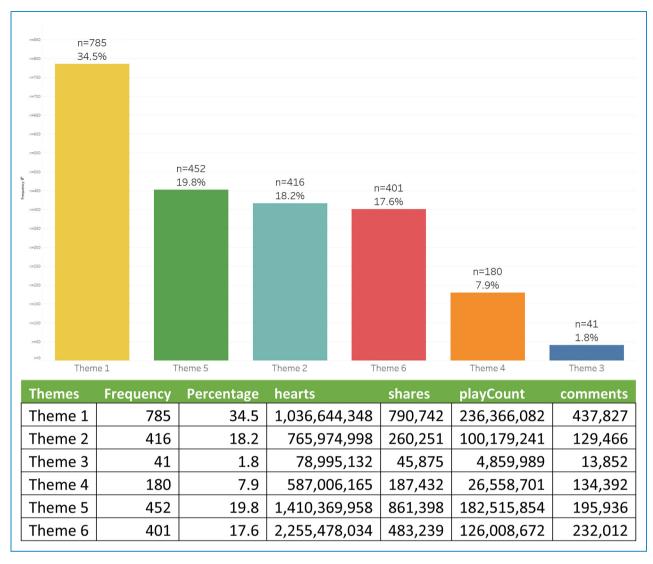


Figure 1. The frequencies and percentages of themes and other metrics.

or by using audio from other sources to respond to the public's response to COVID-19.° These examples provide comedic relief from the persistent stress and emotional distress that healthcare workers frequently experience during the COVID-19 pandemic.

## Theme 6: Educational content

This theme was the fourth most frequent, representing 17.6% of the sample (see Figure 1). However, this theme received the highest number of hearts (n = 2,255,478,034) and the second-highest number of comments (n = 232,012), indicating the attention and appreciation felt by TikTok users towards healthcare workers' efforts to educate the public. In these videos, healthcare workers often provide their audience with detailed information about different aspects associated with COVID-19 or the

healthcare field. This ranged from offering information about vaccines<sup>p</sup> to wearing gloves<sup>q</sup> to explaining the function of the medical tools<sup>r</sup> and discussing detailed information about wearing masks.<sup>s</sup> This is done to combat misinformation and provide viewers with accurate, informed, and detailed information about different parts of the COVID-19 pandemic.

## **Discussion**

Overall, the six major themes highlight the main strategies healthcare workers in this sample used on TikTok to disseminate information about the COVID-19 pandemic. The first theme, healthcare workers' working and mental health conditions, proved to be the most prominent from this sample, while criticism against official authorities was the least frequent (see Figure 1).

The mental health conditions of healthcare workers were continuously tested during the COVID-19 pandemic, especially due to the rapid increase in the number of infected and hospitalized people in a population. This increase in infections, especially for those in COVID-19 hotspots, has placed intense pressure on healthcare systems and, by extension healthcare workers. The growing strain placed on healthcare systems around the world has, by extension, placed a strain on those working in these facilities, no matter their specific job title. The contagious nature of the COVID-19 disease places healthcare workers at a higher risk of infection, which causes an increase in emotional and physical distress experienced by them. 16 The unprecedented nature of this global epidemic resulted in extreme emotional distress among healthcare workers and placed them at a higher risk of depression, anxiety disorders and symptoms, post-traumatic stress disorder, and other psychological disorders. <sup>16–18</sup> These conditions can derive from extreme working conditions, where healthcare workers experience "excessive workload/work hours, inadequate PPE, over-enthusiastic media news, [and] feeling inadequately supported."18 By discussing their mental health concerns on TikTok, healthcare workers can elaborate and show the hidden side of the pandemic to the public, who may be unaware of the working conditions of this group of people.

The second most frequent theme from the sample is #5: Humour/Satire. During the COVID-19 pandemic, humor has acted as a coping mechanism for many, not just healthcare workers. That being said, given the increased workload and stress factors for healthcare workers, humor could be seen as a necessary strategy to help release some of the pressure from these difficult work conditions. Humor and/or satire do not only act as a coping strategy, but can also be an effective way to break tension, strengthen connections, and establish a feeling of unity in a population. The presence of humor in these TikTok posts, alongside its ability to be disseminated to the public with a strong response from other users, suggests that there is some shared understanding amongst viewers and the original poster. 19,20 Further, humor can be understood as something that elicits the specific response of laughter from the audience. 19, 21 Though humor can take on many forms, one noticeable type identified in the sample was satire, which is a genre of humor or comedy that aims to both "critique and entertain." In this way, the audience can laugh and engage more with the content, as critiques can make content more relatable, especially during a global pandemic where people are sharing similar experiences.

Though there have been trials and tribulations experienced by healthcare workers, those working in this industry were some of the most appreciated, especially in the media and on digital platforms. Hence, the second theme, healthcare heroes/appreciation demonstrates a strong and positive

public response to the efforts of healthcare workers during the COVID-19 pandemic. By placing themselves in the direct line of fire in terms of dealing with the virus, healthcare workers generated a stronger response from the public than other essential workers. This is due to the fact that healthcare workers are knowingly putting themselves in direct contact with those infected with COVID-19, and this pandemic is a public health crisis. This issue has generated a favorable narrative in mainstream media where healthcare workers are considered the "heroes" of the pandemic because they are healing the sick, a "morally excellent [action]" that is believed to go beyond the expectations for one's work, where there is some type of risk to the self that comes at the cost of helping others.<sup>22</sup> This shows individuals hanging appreciative signs, making noises during healthcare workers' shift changes, and distributing toys often stating: "thank you heroes."23 By engaging in this theme, healthcare workers are displaying how the public responds to their work, and how there is a strong sense of public support for them and their health assistance, making them a trusted group in the population.

Given that healthcare workers have generated a lot of support from the public, the fourth most common theme is the dissemination of educational information. During the COVID-19 pandemic, many healthcare workers have used social media platforms to provide the public with reliable information about various issues that people may be curious about. TikTok, alongside other social media platforms, has acted as an important platform for disseminating such information and responding to questions and comments from the public, ultimately offering them an educational platform. 24,25 Though there are some challenges when determining someone's credentials on social media platforms, healthcare workers examined in this study state their profession within the medical field before discussing health-related topics. The public positionality of healthcare workers demonstrates their need to provide the public with assurances about the reliability of their health information, for the public often consume conflicting information about the virus, as will be discussed in the following paragraph.

With the rapidly developing and changing situations associated with COVID-19, there has been an influx of conflicting messages and information, provoking a lot of conspiracy theories, misinformation, and "trolling," both within and outside the healthcare sector. The fourth theme, countering misinformation, demonstrates how healthcare workers have attempted to provide the public with clear and accurate information by addressing specific popular conspiracy theories and false information. The rapid nature by which social media posts are shared and disseminated means that misinformation travels at a much faster rate than anticipated, especially since there are not sufficient checks and balances in place to ensure that the information being spread is correct. Some have referred to this rapid spread of misinformation as an "infodemic," a

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term especially curated for the COVID-19 pandemic.<sup>6</sup> As a result, some healthcare workers have decided to respond to this misinformation, where their authority as a worker in the public health sector is meant to convey a level of credibility and expertise on the subject.

The majority of public health authorities in the West have generally attempted to maintain transparency and clarity with the public throughout these precarious times. The least frequent theme identified in the sample was criticism against official authorities, wherein healthcare workers addressed claims and information being disclosed by governments and public health authorities. Here, healthcare workers challenge this information or criticize the lack of mental and physical health initiatives taken by public health authorities. As such, governments have been met with skepticism and criticism from the public, especially healthcare workers, as can be seen from the third theme, criticism against official authorities. In particular, the response from public health authorities and various levels of government has been criticized by healthcare professionals for not adequately meeting their needs, especially since healthcare workers have not received sufficient mental health support nor had proper access to resources to ease their burdens. 6, 27,28 This has resulted in healthcare workers expressing their frustration on online social media platforms, where they have openly critiqued public health authorities and the government.

One major limitation of this study is that the only videos that were included in this study were those that were in English. Though there were many videos with the (English) hashtags used to filter content, the captions, dialogue, and audio were not in English; hence, we excluded them from the study. The limitation of this is that there is no way of discerning whether the non-English content could have provided more insights into the findings of this study. Similarly, this study also did not include videos on accounts that were private at the time of data collection. When the data was collected on 12 July 2021, the accounts that these videos were posted on were not private but, over the course of six months, eventually did privatize, which prevented the researchers from accessing them and including them in the study. To ensure that ethical measures were followed, we only included videos from accounts that were public at the time of coding them.

## **Conclusion**

TikTok, as a highly visual social media platform, has been widely used by frontline workers during the COVID-19 pandemic in various ways. This study identified six mutually exclusive themes that were identified: (1) healthcare workers' mental health and working conditions, (2) healthcare heroes/appreciation, (3) criticism against official authorities, (4) countering misinformation, (5) humour/satire, and (6) educational content. The most dominant

theme was the first theme of videos depicting healthcare workers' mental health and working conditions, which drew attention to the various hardships that they experienced in their jobs. Though other videos in the sample demonstrated that healthcare workers were widely appreciated by others, these TikTok videos were significant in that they offered a glimpse into elements of their daily living conditions during a global pandemic. Therefore, this study provided some insight into how frontline workers use TikTok to disseminate information and education to the public, where they rely on their credibility to do so. Future studies can explore and compare the affordances of other social media platforms that healthcare workers used during the pandemic, like Instagram and Pinterest.

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#### Notes

- a. See https://www.tiktok.com/@amanda\_marie/video/6825270 245524032774.
- See https://www.tiktok.com/@krissimalloy/video/686172170 9939150086.
- c. See https://www.tiktok.com/@gilbert\_and\_jonie/video/6821575 456777571589.
- d. See https://www.tiktok.com/@macaretto\_/video/68230151603 41335301.
- e. See https://www.tiktok.com/@marco\_slh/video/68219529859 75753990.
- f. See https://www.tiktok.com/@dr.kimchee/video/6957403 336043662597 and https://www.tiktok.com/@tiktalkdaily/video/6813842269423078662 and https://www.tiktok.com/@xdrkvioletwingsx/video/6820689024538250501.

- g. See https://www.tiktok.com/@christyprn/video/6942162403907 915013 and https://www.tiktok.com/@officialtiktoknurse/video/ 6818235718444305669.
- h. See https://www.tiktok.com/@nursenunu/video/683196250 9021383942.
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- j. See https://www.tiktok.com/@christinaaaaaaanp/video/68777381 93886711045 and https://www.tiktok.com/@jesss2019/video/695 7065701538450693.
- k. See https://www.tiktok.com/@dr.kimchee/video/6971188877 68832743.
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- m. See https://www.tiktok.com/@sunnybrooke14/video/6914766 638411812102 and https://www.tiktok.com/@thejohnathan dodson/video/6912206804470598917.
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- p. See https://www.tiktok.com/@thatsassynp/video/69192140 20226534662.
- q. See https://www.tiktok.com/@dr.karanr/video/6811969327 940553989.
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