Maternal health posts shared on Instagram: a content analysis of popular birthing and parenting accounts

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Introduction: Recent studies have found that maternal health knowledge gaps exist among Black women, especially related to postpartum complications. The prenatal period is a key time when pregnant women have direct access to evidence-based sources, such as healthcare providers, to obtain maternal health and pregnancy information. Yet, Black pregnant women are also more likely to forgo or engage in prenatal care later than their White counterparts. In recent years, social media has become an essential source of pregnancy-related information and has been shown to effectively improve pregnancy knowledge. Social media has the potential to inform pregnant women about important pregnancy and postpartum health information. Yet, no studies to date have explored the type of maternal health content Black women are exposed to on popular pregnancy and parenting Instagram accounts.

Methods: This content analysis sought to identify what pregnancy topics appear and whether diverse birthing women's representation exists on Instagram accounts popular among birthing women. Instagram posts from three social media accounts commonly used for pregnancy and parenting information from 5/1/18 to 4/30/21 were collected and then screened for maternal health content.

Results: A total of 212 maternal health posts were identified. Maternal health content represented 5% (219 out of 4,572 posts) of all posts shared by all accounts. About 35% (69 out of 196) of the images shared on all of the accounts included people but lacked diversity.

Conclusion: These results highlight significant missed opportunities to share maternal health and Black maternal health content to educate and promote diversity among women who utilize these popular parenting Instagram accounts. Social media can be a viable and innovative solution to help create and promote maternal health information equity.

KEYWORDS

maternal health, black women, social media, Instagram, content analysis, black maternal health

Background

Evidence has shown that Black birthing women are dying at disproportionate rates from pregnancy-related health issues and suffer from severe maternal illnesses compared to their White counterparts (Petersen et al., 2019). Black women also experience higher rates of pregnancy-induced deliveries and more frequently suffer from comorbidities such as chronic hypertension, asthma, placental disorders, gestational diabetes, pre-existing diabetes, and

blood disorders compared to White birthing women as well (Howell et al., 2016). Existing comorbidities tend to be more prevalent and less well-managed amongst Black women, which increases their chance of pregnancy complications (Fryar et al., 2017). Black women also experience issues with access to both contraception and prenatal care, which can result in Black birthing women receiving late (starting in the third trimester) or no prenatal care compared to their White counterparts (National Partnership for Women and Families, 2018; Martin et al., 2019). Research suggests that gaps in maternal health knowledge exist among Black women, especially regarding postpartum complications (Adams and Young, 2022). Also, many black women have reported experiences of feeling disrespected by providers, not getting their questions and concerns addressed, an insufficient amount of time spent, not receiving individualized care or enough information to make proper decisions, and feeling pressure to agree to specific medical procedures by providers [New York State Department of Health (NYSDOH), 2018]. These subpar experiences often drive Black women to other information sources to supplement their knowledge and obtain support.

Given these issues, birthing women are increasingly accessing digital information to supplement their maternal care. One study found that 97% of women use online sources during pregnancy (Lagan et al., 2010); meanwhile, other evidence has shown similarly high (>90%) proportions (Bjelke et al., 2016; Sayakhot and Carolan-Olah, 2016; Slomian et al., 2017; Jacobs et al., 2019). After visiting their pregnancy care providers, roughly 43% of birthing individuals searched the internet for topics discussed during their recent visit to complete the information received from their provider(s) (27%), verify the information received (12%), or a combination of both (4%) (Ahmadian et al., 2020). Internet use during pregnancy can positively affect the decision-making processes of birthing women and increase awareness (Taştekin Ouyaba and Infal Kesim, 2021). Research indicates that patients who used social media reported improved self-management and control over decisions through a feeling of a more equal relationship with providers. (Smailhodzic et al., 2016; De Martino et al., 2017).

Social media, in general, have become an important source of health information for birthing women (Wright et al., 2019). Research found that about 89% used social media sites for questions and advice related to pregnancy and their role as a parent, and 84% considered social media friends a form of social support (Baker and Yang, 2018). Multiple social media platforms and sites provide birthing women with access to an ample amount of pregnancy-related information, news, support groups (transnational), and overall social support (Hether et al., 2016; Baker and Yang, 2018; McCarthy et al., 2020), and have been linked to positive and negative influences on health (Giustini et al., 2018; Gabarron et al., 2021). Social media platforms can extend access to those who may not easily find health information via traditional methods, such as younger people, ethnic minorities, and lower socioeconomic groups; it can also improve health knowledge and healthy behaviors (Chen and Wang, 2021). Chan and Chen (2019) found social media effective at promoting maternal wellbeing and increasing pregnancy knowledge among women who belong to diverse socioeconomic characteristics and ethnicities. Results

from a targeted social media campaign demonstrated that social media can be an effective way to deliver pregnancy-related health information to Black women, even during a global pandemic especially due to its numerous benefits in reaching women who may fall outside traditional health marketing approaches (Bonnevie et al., 2022).

Instagram is a fascinating social media platform as it is predominantly image-based and it currently has two billion monthly active users (Zote, 2023). With the appropriate use of images and text to portray a clear message, Instagram has great potential to disseminate maternal health information. Some studies have focused on other content related to women such as fitness, eating disorders, body image, and more (Tiggemann and Zaccardo, 2018; Gesto et al., 2022; Willoughby et al., 2023). Yet, there have been few Instagram studies related to maternal health content and none that specifically focus on black maternal health content. An unpublished study revealed that a sample of 404 Black women reported using social media as a source for pregnancy-related health information, support, and sharing of pregnancy information (George et al., 2023), with about 90% using Instagram. This study also demonstrated that Black women in their sample often used social media to obtain pregnancy information about themselves and their babies (George et al., 2023).

Despite the use of social media for pregnancy information among Black women, little is known about the content they are exposed to across all social media, including Instagram. Several recent studies have performed qualitative analyses of Instagram posts to examine pregnant women's self-presentation of their bodies (Tiidenberg and Baym, 2017; Mayoh, 2019; Gow et al., 2022) and their experiences with miscarriage (Mercier et al., 2020), morning sickness (Eagle, 2019), and the impact of the "Belly Only Pregnancy" trend (Steube et al., 2022). Although these studies examined Instagram content, none specifically looked at general maternal health content available to birthing women.

Besides examining the maternal health content available on social media, looking at the use of diverse images on social media, especially Instagram because of its image-based nature, is important as well. Research suggests that existing racial and ethnic disparities in health-related knowledge among birthing women may be, in part, related to media representation (Myers et al., 2019). Research also shows a lack of diversity in some healthcare providers' social media accounts. For example, one study found a substantial underrepresentation of Black patients on plastic surgeons' social media, especially for images on plastic surgeons' Instagram accounts (Tirrell et al., 2021). Research examining the impact of diverse images on understudied health topics on social media is warranted (Fung et al., 2020).

It is also important to consider that the lack of formal oversight on social media can potentially spread misinformation to users, as seen throughout the COVID-19 pandemic. A systematic review of misinformation on social media found that misinformation was most prevalent on Twitter and was most often seen with health topics related to smoking products, drugs, vaccines, and diseases (Suarez-Lledo and Alvarez-Galvez, 2021). Schaler and Wingfield (2021) acknowledge the need to control the dissemination of misinformation regarding the impact of the COVID-19 vaccine on

future fertility due to misinformation's ability to impact behavior. Studies found Instagram to be the fourth most common social media platform where misinformation gets disseminated (Suarez-Lledo and Alvarez-Galvez, 2021; Skafle et al., 2022). Not all social media users may possess the needed skills to evaluate whether a post is of high quality or contains inaccurate information. Millions of social media messages generated by birthing women and organizations catering to birthing women on forums (Wexler et al., 2020) and social media accounts have not been evaluated, yet their popularity among birthing women continues to grow. Understanding the nature of maternal health content on social media is also essential to understanding whether and where misinformation appears.

This study grounded and informed by Knowledge Gap Theory conducted a content analysis of Instagram pregnancy and parenting accounts popular among birthing women to determine what pregnancy topics appear and whether diverse birthing women representation exists (Gaziano, 2016). The main aims were to (1) identify the frequencies and examine the content of the maternal health topics, maternal health-related resources, and Black maternal health content shared on Instagram accounts popular with birthing women and (2) assess the frequency of diverse birthing women used in images shared on Instagram accounts popular with birthing women. Lastly, the findings from this study will guide recommendations for practical implications to different stakeholders' approaches.

Methods

This content analysis examined Instagram posts related to maternal health on three pregnancy and parenting accounts popular amongst Black pregnant women. The following information was collected on all posts: post link, post text, publication date, and number of likes/views at the time of data collection. Posts' images and videos were viewed on each pregnancy and parenting account.

Sample collection

JM collected posts from 5/1/2018 to 4/30/2019 for another study June–July 2019 (Manganello et al., 2021). In that study, survey results identified the top five most commonly cited websites used for health, parenting, and child safety information among 580 parents in the United States with a child under the age of seven. Then, posts from social media accounts affiliated with those websites were collected. Three of those five accounts were selected for this study because they were also popular with Black birthing women in a recent survey (George et al., 2023). Research assistants and NG conducted the remaining data collection of posts from 5/1/2019 to 4/30/2021 during Jun - Jul 2021. The first batch of posts' collected by JM's number of likes/views were updated during data collection by NG from Jun to Jul 2021. For all Instagram posts were manually captured for the sample months and entered in an Excel file with post information. Table 1 displays the counts of posts collected for the three chosen social media accounts popular with mothers throughout the entire period.

TABLE 1 Number of Instagram posts by social media account.

| Social media account/ Instagram following	Number of posts collected	Average # of likes a post received	Number of maternal health posts	Number of black maternal health posts
Account 1 (579k followers)	1,702	3,167	191	3
Account 2 (315k followers)	1,040	1,192	2	0
Account 3 (948k followers)	1,830	3,771	26	6

Inclusion criteria

All posts had to appear on one of the three selected social media accounts from May 1, 2018, to April 30, 2021. Two research assistants and the first author screened all the social media posts during the designated timeframe to determine eligibility for the final sample. For a post to be considered maternal health-related, it had to address women's health during any pregnancy phase (including preconception), prenatal, childbirth, or postpartum. Since unintended pregnancies increase a woman's risk for pregnancy complications, the research team thought it was essential to include preconception health posts. We also further assessed whether the posts identified as maternal health-related addressed Black maternal health. The research team defined Black maternal health as the specific reference to the health of Black birthing women during any stage of pregnancy (including preconception), prenatal, childbirth, or postpartum.

Exclusion criteria

We excluded posts that discussed the following topics if there was no mention of maternal health: baby names, parenting advice, religious practices during pregnancy, violence, sexual assault/abuse, traveling with a baby, health services, or medical treatment for a baby or toddler (such as referrals for pediatrician or clinics), fundraisers promotions, and general parenting messages. All duplicate posts were removed from the sample. Also, any posts outside of the study period were excluded.

Coding procedures

NG and JM developed the coding instrument. Authors RdL and MK provided their maternal and child health expertise to enhance the topics/themes addressed in the coding instrument. These topics include diet and fitness, sleep-related tips and issues, prenatal or antenatal care (including prenatal screening
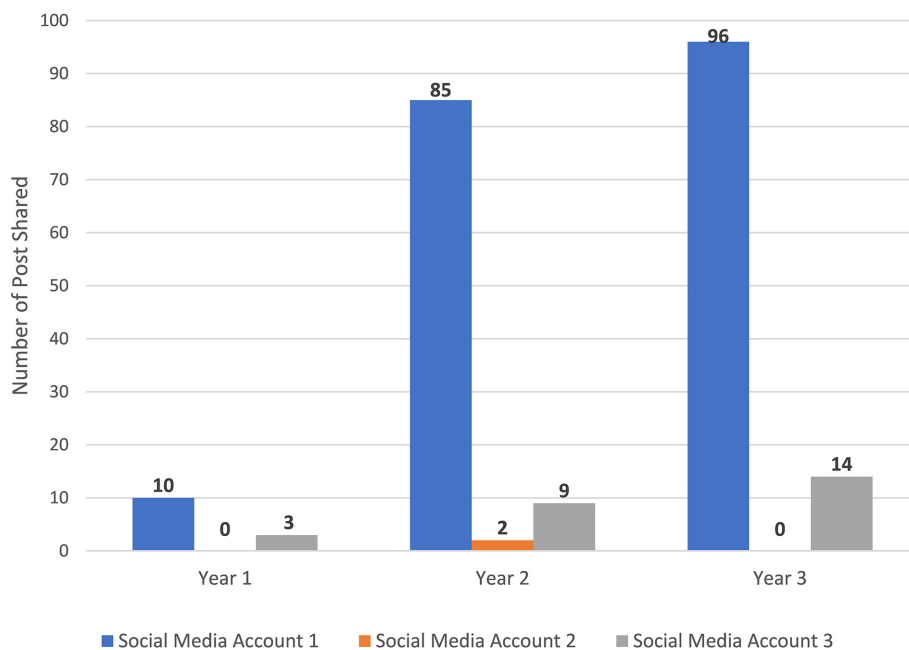
FIGURE 1
Maternal health posts by year and social media account. Year 1 = 5/1/18–4/30/19, Year 2 = 5/1/19–4/30/20, Year 3 = 5/1/20–4/30/21.

FIGURE 2
Word cloud of the topics discussed on all Instagrams accounts.

and tests), labor and delivery, pregnancy complications, cesarean delivery, and more (see the Appendix for a copy of the coding instrument). Coders assessed whether the posts shared maternal health resources. Maternal health posts that include images were coded for whether diverse mothers were present in the picture.

Reliability and analysis

The first author and a research assistant were the coders for this content analysis. The two coders met to discuss any initial discrepancies with the codebook for social media posts using the coding scheme. The two coders then independently coded ten
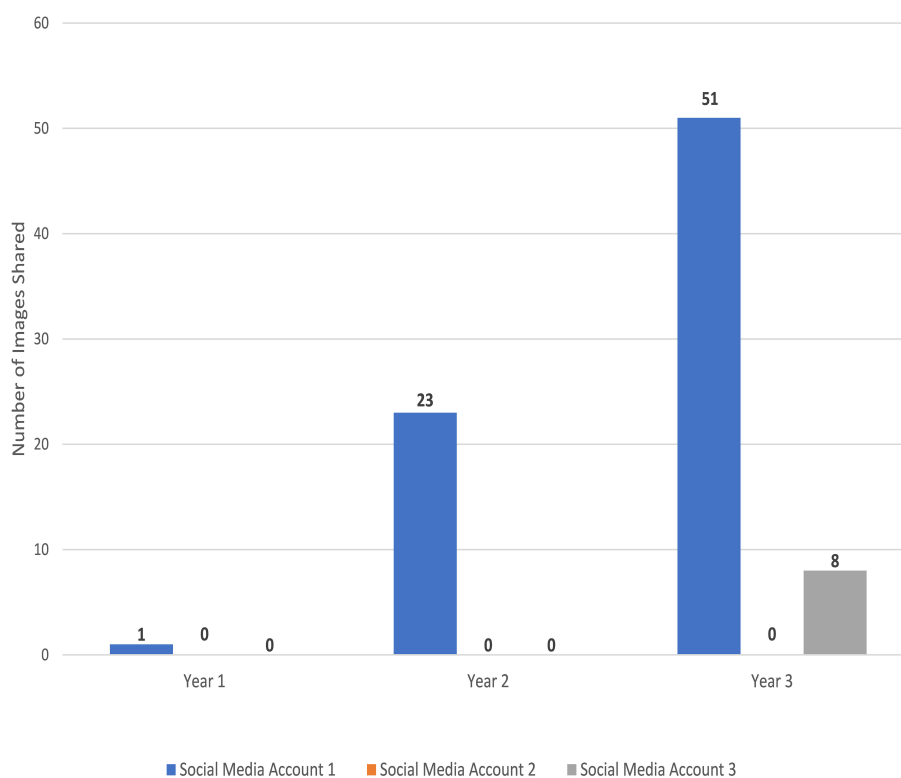
FIGURE 3
Use of diverse birthing women images in post by year and social media account. Year 1 = 5/1/18−4/30/19, Year 2 = 5/1/19−4/30/20, Year 3 = 5/1/20−4/30/21.

posts for codes within the coding instrument in Nvivo 11 and assessed their level of agreement. Coders had an average percentage agreement of 92% and an average kappa value of 0.54. Coding conflicts were discussed, and the coding instrument was updated before moving on. The second coder then randomly coded 10% of the posts, and NG coded all remaining posts. Simple descriptive statistics were calculated for social media posts content by the three accounts separately and in aggregate form.

Results

A total of 4,572 Instagram posts were screened for eligibility (explained previously in the inclusion section; See Table 1 for a breakdown of posts collected). A final sample of 219 maternal health posts was identified. Overall, as time progressed, we observed all Instagram accounts sharing more maternal health-related posts except social media account 2 (see Figure 1). All social media accounts for maternal health posts were informative (cited statistics/evidence), engaging, supportive, shared experiences of other birthing women, or a combination of the categories listed. Across all the accounts, posts that offered emotional support or asked to provide advice to future moms received the most likes. The maternal health content made by these parenting social media accounts performed well with their audience – yielding an average of at least 2,300+ likes on their maternal health posts. The most liked post from the entire sample belonged to social

media account 1, which received over 30,000+ likes and addressed maternal wellbeing for frontline pregnant women working during the COVID-19 pandemic.

Maternal health content

Across all three pregnancy and parenting accounts, maternal health content represents 5% (219 out of 4,572 posts) of the content posted. The majority (87%, 191 posts) of the maternal health posts were found on social media account 1, 1% (2 posts) were on account 2, and 12% were on social media account 3. However, only 11% (191 out of 1,702 posts) of all the content posted by account 1 over the 3 years was maternal health (see Table 1). Of all maternal health posts found amongst the three pregnancy and parenting accounts, Black maternal health accounted for 4% (9 out of 219 posts) of the maternal health topics addressed (Table 1 shows the breakdowns by social media account). Of all maternal health posts, about 30% (65 out of 219 posts) were concerning maternal body changes, 29% (63 out of 219 posts) were about maternal wellbeing, 16% (34 out of 219 posts) were about breastfeeding, 11% (23 out of 219 posts) were regarding cesarean delivery, and 8% (18 out of 219 posts) were about everyday pregnancy symptoms/experiences. Figure 2 displays a word cloud of all topics shared. Important issues such as pregnancy complications and postpartum depression content were not discussed more than 13 times ($\leq$6%) over the entire study period. The content posted did not discuss the need for advocates

(only 2% of the posts addressed this). Lastly, there were almost no prenatal care discussions (1%).

Black maternal health content

A total of nine (9) Black maternal health posts were identified. Each Black maternal health post addressed 1 to 6 topics per post. Although account 1 posted the most maternal health content, social media account 3 posted black maternal health content the most. The majority (6 out of 9 posts) of the Black maternal health content discussed pregnancy complications. Almost all (8 out of 9 posts) of the Black maternal health posts discussed at least two or more topics/issues. Posts mainly addressed pregnancy-related maternal mortality rates (4 out of 9 posts), labor and delivery complications (3 out of 9 posts), and Black women's experiences with racism when receiving care (3 out of 9 posts). Other topics mentioned were doulas/midwives (2 out 9 posts), unconscious or unintentional biased experiences (2 out of 9 posts), being ignored or dismissed when receiving care (2 out 9 posts), the need for culturally appropriate care (2 out of 9 posts), Black health policy (2 out of 9 posts), the need for advocating (2 out 9 posts), breastfeeding challenges (1 out 9 posts), and the promotion of more Black pregnancy providers in practice (1 out 9 posts).

Resources shared

A total of 102 posts shared links to resources. Account 1 posted the majority (77%, 79 posts) of the resources within the entire sample. Meanwhile, account 3 accounted for roughly 22% (22 posts) of the shared links sample. Account 2 was the only account to post a video and a link to resources. The most common topics that posted resources were posts related to breastfeeding (17 out 102 posts), maternal body changes (16 out 102 posts), a cesarean delivery (13 out 102 posts), pregnancy symptoms/experiences (12 out 102 posts), and maternal wellbeing (10 out 102 posts). We also learned that resource links were posted in the description biography section of the social media accounts. This description biography section gets updated with the most current shared resource to match the most recent posting. All data collection occurred outside the study timeframe, which did not allow the authors to access the resources shared to assess the types of resources shared as planned.

Images

About 35% (69 out of 196) of the images that depicted people included diverse birthing women. Social media account 1 posted the most diverse images. Over the 3 years, we observed a gradual increase in the use of diverse birthing women within images posted by social media account 1 (see Figure 3). We also found that social media account 2 did not use any diverse birthing women within the images shared to accompany their maternal health posts; granted, their maternal health content sample size was small. The most frequent topics that posted images inclusive of diverse birthing women were breastfeeding (20 out of 69 posts), maternal well-being

(19 out of 69 posts), maternal body changes (19 out of 69 posts), and cesarean delivery (9 out of 69 posts) posts.

Discussion

This study aimed to identify how often and what type of maternal and Black maternal health topics and maternal health-related resources were posted on popular parenting Instagram accounts. We also wanted to determine whether these popular pregnancy and parenting accounts use diverse images within their posts and provide practical approaches different stakeholders undertake. This study highlighted the lack of maternal health content available to birthing individuals on social media accounts popular within their population. Though we observed an increase in maternal health content posted on two social media accounts, overall – there was a lack of maternal health information. Our results also suggest that inclusive birthing women images remain limited but are more often used now than in recent years.

One of the most striking findings was that information regarding important topics such as pregnancy complications and postpartum depression, which affect a significant number of birthing women per year, were rarely discussed on pregnancy and parenting accounts (George et al., 2023). Although these topics are not "hot" or "clickbait" topics to yield significant user engagement, they are still important issues to highlight. Yet, the majority of content focused on maternity clothing, personal care products, and life during pregnancy. Less access to maternal health content that addresses adverse pregnancy outcomes under prepares black birthing women for potential birthing experiences they are at high risk of encountering. Studies show the pregnancy content birthing women most frequently look for online and on social media (such as fetal development, diet and exercise during pregnancy, childbirth, pregnancy complications, and breastfeeding) were posted by these popular pregnancy and parenting accounts (Sayakhot and Carolan-Olah, 2016; Javanmardi et al., 2018; Ahmadian et al., 2020; What To Expect, 2020; Ghiasi, 2021; Skouteris and Savaglio, 2021; Taştekin Ouyaba and Infal Kesim, 2021). Although the frequency at which maternal health content was posted was underwhelming; however, there were promising indications of more maternal health content being shared as time went on. For example, in all pregnancy and parenting Instagram accounts the number of maternal health posts increased each year.

There was no Black maternal health content posted on the selected pregnancy and parenting accounts before June 2020. This is troubling because posting content that addresses Black maternal health and Black maternal health disparities is key to helping raise awareness of the existing inequities in maternity care. Also, social media can create an avenue to share educational materials and resources on healthy birthing specific to Black people to increase self-advocacy and overall knowledge. Social media can also help increase awareness and knowledge of early signs of pregnancy and postpartum complications. As the internet and social media provide patients with better access to health information and patients expect to be more engaged in health decision-making, traditional models of the patient-provider relationship and communication strategies must be revised to

adapt to this shifting factor (Tan and Goonawardene, 2017). Evidence showed that patients experienced a better patient-physician relationship when they had the opportunity to discuss their online health information with their physicians (Bianco et al., 2013; Tan and Goonawardene, 2017).

To appropriately address Black maternal health disparities, we must also educate a range of stakeholders on Black maternal health issues and promote more open dialogue to comprehensively understand the maternal care experiences of Black women from preconception to postpartum. Stakeholders such as providers, governmental agencies, community-based organizations, and faith-based organizations are important to educate on Black maternal health issues because they interact with their respective communities in various capacities that public health practitioners and health educators may not. Social media accounts can be utilized by these stakeholders to educate, initiate discussions and engage with their respective reachable audiences concerning Black maternal health issues by sharing the best ways to support the cause and local resources available. Organizations could also leverage their own social media platforms to educate and increase engagement on their accounts. Most highly engaging social media posts content that has gone viral or was trending on the platform offered an emotional support component, which increased the likelihood of individuals sharing, liking, or commenting on the post (Oviatt and Reich, 2019). Also, there are potential opportunities for inter-organizational and inter-sectoral collaborations among organizations with a large, engaged audience (the smallest audience size is 315k followers). Bonnevie and her colleagues demonstrated that creating and disseminating a culturally-appropriate digital intervention to promote positive pregnancy outcomes among at-risk women is feasible and does yield positive outcomes (Bonnevie et al., 2021).

Results also show that a fair amount of diverse birthing images were used throughout the study period and that they increased over time. Prior research has found that racial and ethnic disparities in health-related knowledge may be related to media representation (Myers et al., 2019). Using more diverse images and culturally appropriate language on social media can potentially reduce existing racial and ethnic health-related knowledge gaps. Patient diversity on social media platforms may also expose providers and other stakeholders to the perspectives of a more diverse group of birthing women. Equitable representation on social media may be necessary to decrease patient barriers to healthcare for minority populations and improve physician engagement with diverse populations.

Recent increases in widespread discussions concerning maternal health disparities may probably have led to the increase in diverse images we observed put forth by social media accounts. For example, the American College of Obstetricians and Gynecologists partnered with Black Mamas Matter Alliance on Black Maternal Health Week in April 2020, and we observed Black maternal health content being shared on two pregnancy and parenting accounts for the first time in June 2020. Also, since 2018 many Black public figures have been using their platforms to share their maternal health experiences. As an example, politicians such as Vice President Kamala Harris and celebrities such as Serena Williams, Beyoncé, Allyson Felix, and Michelle Obama have been advocating for Black maternal health improvement.

These observations are consistent with prior health research, which shows that social media content posted by celebrities or non-health-related organizations is more likely to be shared or seen (Nguyen et al., 2018; Vasconcelos Silva et al., 2020). There have also been many summits, conferences, campaigns, listening sessions, and coalitions promoting helpful dialogues and interventions on how to improve maternal health within the US. Further research is needed to understand better whether the publicity of this topic has led to changes in social media coverage of maternal health disparities.

In reviewing the posts, we noted a few points we could recommend to accounts providing parenting and pregnancy information. One easy change social media accounts can make is moving their posted links from their description bio to the caption of each posting, if possible. Nearly all resources posted by these accounts are frequently lost since the resource link is posted in the account bio section and is updated each time a new post that shares a resource link is added. Therefore, relocating the links or adding hyperlinks to the posts can enable pregnant moms to refer to resources at their preferred time and not potentially miss helpful information regarding their pregnancy experiences. Another helpful change can be sharing more educational maternal health content aimed to raise awareness for pregnancy complications and their respective warning signs, the benefits of doulas and midwifery services, and the importance of participating in prenatal care earliest as possible into the pregnancy. Lastly, reposting maternal health-related educational content from high-quality trusted public health sources can be helpful as well.

Limitations

Notably, there can be a selection bias in the organizations' accounts selected for this study. The social media accounts were selected based on their audience reach (Instagram following) and Black women indicating they used their accounts for pregnancy information seeking during their most recent pregnancy in our prior work. Also, the number of maternal health posts identified was not balanced. The names of the organizations' accounts used for this study were not disclosed due to changes to Instagram's privacy rules and social media research ethics (Hunter et al., 2018). Also, due to the timing of data collection, we were unable to access the links shared to examine the types of resources shared due to each link being posted in the organization's description bio. Also, it is important to acknowledge that number of likes/views on postings may have changed during data collection, however, we do expect gradual increases in the number of likes/views on each post as the Instagram following increases. By the end of the data collection phase, the growth in accounts following the respective pages was not large enough to concern the PI about existing likes/views. Black maternal health posts within this sample were too small to conduct bivariate or further analyses. Another notable limitation is the difficulty of assessing an individual's race visually. A moderate kappa value was observed; since the percent agreement was high, the coders were well trained and had backgrounds in nursing and maternal health – the authors deemed the kappa value acceptable. Lastly, the findings in this study might not be generalizable to marginalized women outside of the US due to different cultural and

societal practices or women who live in communities where their social media content is regulated or censored.

Conclusion

To our knowledge, this is the first study to provide a content analysis of maternal health (especially Black maternal health) content available to birthing women on Instagram for this timeframe. Our findings contribute to a gap in the field of social media and health by studying pregnancy information through the lens of maternal health disparities. Given the lack of maternal health information seen on these social media accounts, we would like to issue a call to action to all social media outlets catered toward pregnant women, women seeking pregnancy, and women open to pregnancy to share more maternal health and Black-specific maternal health content to educate these women on existing maternal health disparities. Popular social media accounts have the ability to help disseminate important information given their large number of followers. We also believe that innovative partnerships with health organizations, the technology industry, academia, and community stakeholders, can create a more robust information environment on social media to improve the knowledge that can help contribute to reducing maternal health disparities. Closing the informational and knowledge gaps among stakeholders and communities is only one component of the larger problem at hand. More programs, community resources, state and federal policies, support for prioritizing maternal health issues, collaborative and new innovative partnerships, and creative solutions are needed to improve all factors contributing to maternal health disparities. However, improving the widely accessible communications about maternal health and disparities can be a tangible step in the right direction.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Author contributions

Acknowledgments

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fcomm. 2023.1190689/full#supplementary-material

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