



# Building Strong Futures: The Feasibility of Using a Targeted Digital Media Campaign to Improve Knowledge About Pregnancy and Low Birthweight Among Black Women

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## Abstract

**Objective** Low birthweight is one of the main causes of poor health outcomes among newborns, with Black women having a disproportionately high prevalence. A digital intervention targeted Black women in Orange County, Florida with information on positive pregnancy-related knowledge and attitudes related to low birthweight. This paper reports on campaign methods for the first 2.5 years of implementation.

**Methods** Campaign content was tailored toward Black women, around a reproductive empowerment lens. Content focused on emphasizing healthy pregnancy-related behaviors and creating positive representations of Black women throughout the various stages of pregnancy through both static images and a web series. Digital metrics gauged campaign engagement. Three cross-sectional online surveys conducted in the intervention county examined Black women's pregnancy-related knowledge, attitudes, and behaviors.

**Results** After two years of campaign implementation, social media accounts showed 1784 followers. While Facebook showed more average monthly impressions, Instagram showed more average monthly engagements. Survey results showed some increases in knowledge about prenatal care, weight gain, exercise, and the health impacts of low birthweight.

**Conclusions for Practice** This study highlights the potential for a culturally-appropriate digital intervention to promote positive pregnancy outcomes among at-risk women. Digital interventions offer a potential way to achieve positive pregnancy-related behavior changes on a larger scale. This may be particularly important given that the COVID-19 pandemic may be changing the ways that pregnant women access information. Studies should examine the impact and feasibility of using culturally-appropriate digital interventions that directly address Black women and their specific experiences during pregnancy.

**Keywords** Maternal health · Media campaigns · Low birthweight · Health disparities

## Significance Statement

Low birthweight is a health problem with clear racial and ethnic disparities, disproportionately affecting Black women. This present paper reports on the implementation of a tailored low birthweight campaign, delivered to Black women in Orange County, Florida from 2018-2020. The intervention was designed to address positive pregnancy-related

knowledge and attitudes related to low birthweight. Results suggest that a targeted and culturally appropriate digital intervention is feasible, and offers an innovative approach to potentially improve knowledge and outcomes among Black women. This strategy presents an opportunity to increase health equity and achieve positive behavior change among at-risk populations.

## Introduction

Low birthweight, defined as weighing less than 2500 g or 5 lb 8 oz at birth, is one of the main causes of poor short-term and long-term health outcomes among newborns (de Bernabé 2004). Short-term effects include sickness and infection during the first few days of life, while long-term

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effects include higher rates of subnormal growth, illnesses, and neurodevelopmental problems during childhood that can persist into adulthood (Centers for Disease Control and Prevention 2016; Hack et al. 1995). Compared to other racial and ethnic groups, Black women show almost double the prevalence of low birthweight infants (March of Dimes 2015; Pallotto et al. 2000). In Orange County, Florida, the percentage of low birthweight infants (8.8%) is higher than that seen both statewide (8.7%) and nationally (8.0%), and about 12% of Black women have low birthweight infants, compared to 7.1% of white non-Hispanic women and 7.5% of Hispanic women (Florida Department of Health Bureau of Vital Statistics 2017).

The reasons for these disparities are multi-faceted. Black women experience challenges in accessing culturally competent prenatal care, and have higher rates of low quality, infrequent, and no prenatal care, compared to their white counterparts (Michelle and Osterman 2016). When they do have access to healthcare, Black women may have negative perceptions toward, or experiences with, providers due to historically discriminatory practices within reproductive healthcare which may result in distrust toward healthcare systems (Becker and Tsui 2008; Nicolaidis 2010; Prather et al. 2018). Black communities also have lower access to quality healthcare in general, which contributes to higher rates of chronic conditions that are related to low birthweight (Howell et al. 2020). Finally, Black women often experience a host of social, environmental, and financial stressors, such as racism, poverty, and violence—all of which impact maternal and child health outcomes (Howell et al. 2020).

While many of the reasons for pregnancy-related disparities are a result of large-scale structural issues, increasing knowledge about healthy pregnancy may be one way to improve pregnancy outcomes among Black women. Research has cited misconceptions within specific topics related to pregnancy as key knowledge areas that require specific messaging to convey accurate information. These areas include appropriate weight gain during pregnancy, the safety of physical activity during pregnancy, and healthy pregnancy diet (Herring et al. 2012; Whitaker et al. 2016). Increasing knowledge about healthy pregnancy is particularly important within the context of the COVID-19 pandemic. It is unclear whether shifts toward telehealth may allow for Black women to more easily access care; even so, fewer in-person visits may result in fewer opportunities for diagnostic testing and early detection of pregnancy-related issues (Harrison and Megibow 2020). Black communities also bear a disproportionate burden of COVID-19 morbidity and mortality (van Dorn et al. 2020). The impacts of the pandemic are likely to be felt for years; the combination of clear racial disparities in maternal health and the disproportionate COVID-19 burden highlight a need for new methods

to reach Black women who may be pregnant or intending on becoming pregnant.

With the COVID-19 pandemic shifting many in-person programs to offer virtual options, digitally-based interventions offer an enticing way to achieve positive pregnancy-related behavior changes on a larger scale. Digital interventions have shown promise in promoting breastfeeding, blood pressure monitoring, and healthy weight management among pregnant and postpartum women (Evans et al. 2019; Rivera-Romero et al. 2018; Dauphin 2020). Digitally-based interventions also take into account the fact that women report frequently using the internet to look for health information during pregnancy (Graham et al. 2019; Lupton 2016).

In January 2018, The Public Good Projects (PGP) began Strong Beautiful Future, an education-based digital campaign with the aim of increasing knowledge about low birthweight and factors affecting healthy pregnancy. The Strong Beautiful Future campaign provided pregnancy-related health information to Black women in Orange County, Florida. This present paper will report on the past two and a half years of campaign implementation. The goals of this paper are to: present an overview of the campaign, examine the feasibility of implementing and evaluating a highly targeted digital low birthweight intervention in a specific community in Florida, and comment on the potentials for adapting the intervention to other areas both within the COVID-19 context and beyond.

## Methods

### Campaign Creation

The Strong Beautiful Future campaign targeted women living in 15 zip codes in Orange County, Florida. The zip codes were predominantly located in the western portion of Orange County, corresponding to areas that were deemed a priority by the funder, and that had a high concentration of the campaign's target audience. Strong Beautiful Future communicated information predominantly through social media (Instagram, Facebook and Twitter) and a website. All campaign content was created around conceptual frameworks of reproductive empowerment developed by the International Center for Research on Women and experts in the field (Edmeades et al. 2018). Campaign content was organized around four health pillars, with each corresponding to a key aspect of reducing low birthweight that has been highlighted as a priority area for pregnancy-related health education. Pillars included: (1) Prenatal care: Encouraging women to engage early and often through pregnancy, increasing confidence to talk with a provider about low birthweight, trusting providers' advice over advice from others, and increasing awareness of the connections between prenatal care and low

birthweight; (2) Weight gain: Decreasing misinformation around ideal amount of gestational weight gain, increasing awareness about the important of exercise during pregnancy for most women; (3) Nutrition: Increasing awareness of healthy eating habits during pregnancy; (4) Health impacts of low birthweight: Increasing knowledge of low birthweight and its health impacts on the baby.

In addition to emphasizing healthy pregnancy-related behaviors, the campaign focused content on creating positive representations of Black women throughout the various stages of pregnancy. When Black women are represented in the media, imagery often reinforces negative stereotypes and promotes cultural insensitivity—both in general media representations (Dillon and Connell 2019; Littlefield 2008; Mastro and Stern 2003) as well as representations of sexuality and sexual health (Collins 2004; Prather et al. 2018). Research has shown that Black people cite inadequate representation and failure to cover racially-relevant health topics in a culturally sensitive way as a key problem in the health information they see from the media (Brodie et al. 1999). Although public health professionals widely acknowledge the importance of ensuring that content is appropriate for specific diverse audiences, there is less of an understanding about how to accomplish that goal (Kreuter and McClure 2004). Strong Beautiful Future content focused on empowering messages that were intended to resonate with Black women in the area where the intervention was delivered. Marketing research guided the look and feel of the content, through analysis of popular social media pages among the target audience and zip-code level psychographics (Facebook 2020; ArcGIS 2020). During the first year of campaign implementation content was designed to convey its messages through original artwork, designed by a Black artist, highlighting Black women in empowering pregnancy-related images. During the second year of campaign implementation, a web series was added, which featured videos of local Black prenatal care providers conveying pregnancy information. Videos featured a pediatrician, obstetrician/gynecologist, two doulas, and a registered nurse. The video series was started out of the recognition that the campaign itself was not focusing on increasing access to culturally competent prenatal care. By featuring local prenatal care providers in video content, the campaign aimed to relay important pregnancy information from trusted local sources, and foster confidence in Black women talking with their prenatal care providers about health issues during pregnancy. Throughout the campaign, the Strong Beautiful Future campaign asked local women to provide their thoughts on things they wish they had known during pregnancy, or questions that they have during their current pregnancy. These questions were sourced through prompts on the campaign's social media content, and pertinent questions were answered in future content. Content was posted 5–7 times each week across all

social media pages. Digital ads were used to increase the reach of the campaign, through an average monthly budget of \$250 across social media platforms. During Year 2, the campaign added a YouTube channel, from which the web series videos were hosted.

During both Year 1 and Year 2, local social media influencers were engaged to promote the campaign through their own social media channels. Social media influencers have recently been highlighted for their potential to reach audiences in a credible, relatable way that is outside the scope of traditional on-the-ground or digital campaigns (Djafarova et al. 2017; Freberg et al. 2011). Research has shown their potential utility in promoting reproductive health-related behaviors such as breastfeeding or HPV vaccination (Moukartzel et al. 2020; Ortiz et al. 2019). Influencers were identified manually, by searching local hashtags and business for accounts that appeared influential or attracted engagement from others. Influencers were asked to share content from the Strong Beautiful Future campaign on their own Facebook or Instagram accounts. During Year 1, the campaign engaged 24 influencers. During Year 2, the campaign engaged 26 influencers.

Although the campaign was implemented under the brand name Strong Beautiful Future, the intervention content was often unbranded. This lack of an emphasis on branding is an advertising strategy used in the marketing industry as a way of encouraging an audience to focus on the actual content of an advertisement or campaign rather than emphasizing increased awareness of a brand name (Anthoine-Badaroux et al. 2017; Bellman et al. 2017).

### Digital Metrics

Metrics for the four social media accounts as well as the website were collected and analyzed using Google Analytics. Metrics allow for the examination of digital engagement across the four social media pages and website. Social media metrics that were analyzed include number of impressions (number of times that content was displayed), average daily reach (average total number of unique people who viewed the content each day), and engagements (total number of likes, comments, shares, video views, or post clicks). Website metrics included the total number of unique users, average users per month, and total non-unique users.

### Online Surveys

Baseline and two follow-up cross-sectional online surveys were conducted. Surveys examined women's prenatal care behaviors, attitudes toward specific health behaviors during pregnancy, and knowledge about low birthweight and its impacts on the fetus or infant. Surveys were intended to both gauge the progress of the intervention and to be

used as a way of prioritizing facts used in campaign content. Measures were adapted from organizations such as the March of Dimes, National Center for Health Statistics, and formative research undertaken by noted authors in the field. (Robert Wood Johnson Foundation, University of Wisconsin Population Health Institute 2018; Shub et al. 2013; Whitaker et al. 2016). Questions were selected to coincide with specific health fact messages being conveyed in the content pillars. The first survey was conducted from December 13, 2017 to January 5, 2018 before the campaign was implemented, the year one survey was conducted from January 15, 2019 to February 3, 2019, and the year two survey was conducted from May 15, 2020 to June 28, 2020. Eligibility criteria included: being between ages 18 and 65, female, and currently living in one of 15 zip codes in Orange County, Florida.

Surveys at each of the time periods were implemented using two recruitment methods. Respondents were recruited through online research panels through Qualtrics, an organization that leverages multiple panel partners to recruit respondents for online surveys. To supplement Qualtrics panel surveys, respondents were also recruited through advertisements on social media, including Facebook and Instagram. For both of the recruitment methods, respondents were allowed to opt out or quit a survey at any time. No personally identifiable information was collected from respondents or transferred to researchers, and each respondent was assigned a unique identification number for analysis. Upon clicking on the survey link either through Qualtrics or online advertisements, individuals were taken to the survey page where they completed a screener to determine eligibility. If they were eligible, they were asked to provide consent to participate, and if they provided consent they would then continue to the survey. This study was conducted according to ethical principles in research with women (including pregnant women) and was determined to be exempt from IRB Review by IntegReview, and therefore in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendment. All analysis was conducted using IBM SPSS Statistics with 2-sided Pearson Chi-squared tests. Analysis for this study examined the sub-sample of Black women only.

## Results

### Digital Metrics

Across all social media accounts, the campaign showed a total of 1784 followers, with most on Facebook (920), followed by Instagram (709) and Twitter (155). In both Year 1 and Year 2, Facebook showed the highest average monthly impressions (31,392 Year 1; 23,234 Year 2), followed by

Instagram (4500 Year 1; 11,566 Year 2). Average monthly engagements showed the inverse pattern, with Instagram showing the highest level of engagements (476 Year 1; 678 Year 2), followed by Facebook (34 Year 1; 438 Year 2). Across all metrics examined, there were increases from Year 1 to Year 2, with the exception of average monthly Facebook impressions and average daily Facebook reach. Videos posted on the campaign's YouTube page during Year 2 received 6772 average monthly impressions, and 2520 engagements (which are classified by YouTube as video views). Along with increases in social media metrics, website metrics also experienced increases in both total number of users, average number of users per month, and total sessions.

### Online Surveys

Surveys concluded with a total of 30 participants who self-identified as Black at baseline, 61 at Year 1, and 85 at Year 2. Across all years examined, a majority of respondents were under age 45 (76.7% baseline, 83.6% Year 1; 91.8% Year 2). Women were also asked their previous pregnancy history and intentions to become pregnant. At baseline, 21.1% of women were currently pregnant and 21.1% were intending on getting pregnant, compared to 29.5% currently pregnant and 13.8% intending at Year 1 and 20.0% currently pregnant and 12.3% intending at Year 2.

Respondents were asked questions related to their knowledge and attitudes toward healthy pregnancy and low birthweight. While results showed positive trends in questions related to campaign content, none of the results achieved statistical significance, likely due to the small sample size, given the fact that the intervention and survey were restricted to 15 zip codes. In questions that assessed knowledge and behaviors related to prenatal care, women showed higher levels of awareness that regular check-ins with a doctors can lead to healthier babies (66.7% baseline; 80.1% Year 1; 81.2% Year 2,  $p=0.336$ ). Similar increases were observed in agreement that women who do not have quality prenatal care are more likely to have babies born with low birthweight (46.7% baseline; 60.7% Year 1; 58.8% Year 2,  $p=0.275$ ). The largest percentage point increase related to prenatal care was seen in intentions to talk with a doctor or prenatal care provider about their baby's weight (50.0% baseline; 45.5% Year 1; 68.2% follow-up,  $p=0.203$ ), asked of those who are currently pregnant or intending on becoming pregnant.

Within questions about weight gain, increases were seen in awareness of the safe amount of weight gain during pregnancy (63.6% baseline; 68.8% Year 1; 75.0% Year 2,  $p=0.372$ ), along with an increase in awareness that exercise during pregnancy is not dangerous for the baby (56.7% baseline; 63.9% Year 1; 61.2% Year 2,  $p=0.436$ ). Knowledge of the impacts of low birthweight into adulthood also was



higher from baseline (23.3% baseline; 42.6% Year 1; 37.6% Year 2,  $p=0.152$ ), along with agreement that health advice for one woman may not apply to another (63.3% baseline; 70.5% Year 1; 76.5% Year 2).

Though not used as a metric for campaign progress, questions were added to ask where women received their health-related pregnancy information as a way of ensuring campaign content was resonating with women and taking into account their healthcare provider preferences. From baseline to Year 2, respondents showed small declines in reports of receiving information from a doctor (81.9% baseline; 96.9% Year 1; 78.6% Year 2,  $p=0.087$ ), and an increase in receiving information from a midwife (0.0% baseline; 15.6% Year 1; 17.9% Year 2,  $p=0.334$ ). Just over half of women reported getting health related pregnancy information from a family member (54.6% baseline; 53.1% Year 1; 57.1% Year 2), and just under 40% from a friend (36.4% baseline; 37.5% Year 1; 39.3% Year 2). Receiving information from the internet also increased substantially (27.3% baseline; 46.9% Year 1; 60.7% Year 2).

## Discussion

This study provides an overview of the creation of the Strong Beautiful Future campaign, highlighting ways that a targeted digital approach to providing pregnancy-related health information may be feasible to reach Black women in targeted locations. The fact that survey respondents appeared to show an increase in reliance on the internet for pregnancy-related health information further underscores the potential for using a digital strategy to support healthy pregnancies. Digital metrics also suggested that the digital approach was an acceptable way to reach women, as evidenced by the high levels of engagement. The Year 2 shift in strategy to include web videos may have caused the improvement in metrics, with the average monthly Instagram and Twitter impressions increasing, and average monthly engagements increasing on Instagram, Facebook, and Twitter. Of note, average Facebook impressions declined from Year 1 to Year 2 because a portion of the Facebook ad budget was shifted to YouTube ads for the video series. Even though Instagram had fewer followers and impressions than Facebook, the platform also showed higher average monthly engagements—suggesting that while it may be easier to build a follower base on Facebook, Instagram appears to be more likely to attract engagements. This aligns with what has been suggested in industry benchmark data (Leone 2018).

While survey did not produce statistically significant differences for the indicators examined at baseline versus follow-up, they did show some increases in knowledge about prenatal care, weight gain, exercise, and the health impacts of low birthweight. Moderate exercise and appropriate

weight gain are closely related to positive pregnancy outcomes, as they protect against health risks for the woman and the child; having a high body mass index is correlated with an increased risk of preterm birth and having a low birthweight infant (Children's Hospital of Philadelphia 2019; McDonald et al. 2010). Studies have shown that Black women in particular share many barriers to exercise, including safety concerns for the fetus (Goodrich et al. 2013). We therefore found it encouraging that women reported improvements in questions around these topics. The survey also revealed the importance of including midwives in content and messaging around low birthweight and reproductive health. Any content toward Black women should reference midwives as well as doctors. Midwives have historically played an important role in the reproductive care of Black women (Guerra-Reyes and Hamilton 2017). Since COVID-19, some news reports have suggested that Black women may be increasingly turning to midwives instead of doctors (Scheier 2020). Greater access to midwifery care could also improve reproductive care and lower infant and maternal mortality rates (Goode and Rothman 2017). Throughout the Year 2 web series, references were frequently made to midwives and doulas, which may have resonated with viewers and contributed to the improvements in digital metrics.

While some on-the-ground organizations have found success in reaching Black women to increase healthy pregnancy outcomes, they may be limited in scope due to their hyper-local nature (Hmiel et al. 2019; Pies et al. 2016). The incorporation of telehealth strategies may be a promising way to increase the delivery of health information, particularly given the increase in use since the COVID-19 pandemic (Betancourt et al. 2020). While there are various on the ground programs in the intervention area, Strong Beautiful Future is the only dedicated digital campaign that uses tailored strategies to reach Black women. Future research should examine how the integration of best practices from on-the-ground, telehealth, and digital strategies may be a way to effectively reach women across multiple environments. This is particularly given that the COVID-19 pandemic may be changing the ways that pregnant women access information.

## Limitations

There are some limitations to this study. All surveys were cross-sectional, and results should not be interpreted as direct confirmation of behavior change or effectiveness. Given that surveys were cross-sectional, we cannot guarantee that any differences were due to our campaign. Women may also have answered the surveys according to a social desirability bias; however, because all surveys were anonymous and completed online, women may have felt more comfortable providing their honest opinions. Additionally,

**Table 1** Social media and website metrics, Year 1 (January 1, 2018–August 31, 2019) and Year 2 (September 1, 2019–August 31, 2020)

Social media metrics								
	Instagram		Facebook		Twitter		YouTube	
	Year 1	Year 2	Year 1	Year 2	Year 1	Year 2	Year 1	Year 2
Average Monthly Impressions	4500	11,566	31,392	23,234	4407	7274	–	6772
Average daily reach	156	272	1072	624	N/A*	N/A*	–	
Average monthly engagements**	476	678	34	438	29	104	–	2520
Website metrics				Year 1		Year 2		
Total users (unique)				1045		1154		
Average users/month				70		96		
Total sessions (not unique)				1313		1577		

\*Twitter does not calculate reach metrics

\*\*Engagements include likes, comments, shares, video views or post clicks

from baseline through Year 1 and Year 2, the sample showed a higher proportion of women with higher total household incomes, which may have contributed to the survey results. Finally, the sample size of the online survey limited our ability to observe statistically significant changes. The limited sample size is likely due in part to the fact that the campaign and surveys were both hyper-targeted to reach women in only 15 zip codes. This level of targeting limited our sample

size potential, and would likely be a similar challenge for others working in small and hard to reach populations. Despite these limitations, we feel these data to be important because of the need for information around pregnant Black women, in order to improve campaigns that reach them. The digital metrics that are presented also suggest that the intervention did resonate with women on the ground. We believe that these results present important information to show the

**Table 2** Demographics of Black Survey respondents, baseline—Year 2

	Baseline (N=30)	Year 1 (N=61)	Year 2 (N=85)
Age groups			
18–25	26.7% (8)	32.8% (20)	38.8% (33)
26–35	23.3% (7)	26.2% (16)	27.1% (23)
36–45	26.7% (8)	29.5% (18)	16.5% (14)
46+	23.3% (7)	11.5% (7)	17.6% (15)
Hispanic	0.0% (0)	16.4% (10)	8.2% (7)
Race*			
White	13.3% (4)	3.3% (2)	3.5% (3)
African American/Black	100.0% (30)	100.0% (61)	100.0% (85)
Asian	0.0% (0)	0.0% (0)	1.2% (1)
Hawaiian/Pacific Islander	0.0% (0)	3.3% (2)	0.0% (0)
Native American	0.0% (0)	1.6% (1)	1.2% (1)
Other	0.0% (0)	0.0% (0)	1.2% (1)
Total household income			
Less than \$20,000	36.7% (11)	24.6% (15)	21.2% (18)
Less than \$30,000	26.7% (8)	19.7% (12)	14.1% (12)
Less than \$40,000	10.0% (3)	13.1% (8)	11.8% (10)
Less than \$50,000	6.7% (2)	14.8% (9)	15.3% (13)
Less than \$60,000	6.7% (2)	8.2% (5)	9.4% (8)
More than \$60,001	6.7% (2)	13.1% (13)	16.5% (14)
Have previously been pregnant	23.3% (7)	23.0% (14)	12.9% (11)
Currently pregnant	21.1% (4)	29.5% (18)	20.0% (17)
Intending to be pregnant in the next 6 months	21.1% (4)	13.8% (4)	12.3% (7)

\*Respondents were allowed to select more than one race

**Table 3** Agreement with pregnancy health-related questions, Black respondents only, baseline—Year 2

	Baseline	Year 1	Year 2	<i>p</i>
Regular check-ins with a doctor lead to healthier babies and fewer complications during labor	66.7% (20)	80.3% (49)	81.2% (69)	0.336
I know what is a safe amount of weight to gain during pregnancy	63.6% (7)	68.8% (22)	75.0% (21)	0.372
I feel confident that I can lose all the weight that I gain during my pregnancy	63.6% (7)	62.5% (20)	64.3% (18)	0.553
Health advice for one woman may not apply to other pregnant women	63.3% (19)	70.5% (43)	76.5% (65)	0.460
Exercise during pregnancy is dangerous for the baby <sup>b</sup>	56.7% (17)	63.9% (39)	61.2% (52)	0.436
During my pregnancy, I worry about what types of food I should eat because of the way it affects my baby <sup>c</sup>	50.0% (2)	72.2% (13)	58.8% (10)	0.448
Women who do not have quality prenatal care are more likely to have babies born with low birth weight	46.7% (14)	60.7% (37)	58.8% (50)	0.275
Babies born with low birthweight are more likely to have health problems as an adult	23.3% (7)	42.6% (26)	37.6% (32)	0.152
During my pregnancy, I intend on talking to my doctor or prenatal care provider about my baby's weight <sup>a</sup>	50.0% (4)	45.5% (10)	68.2% (15)	0.203
During my pregnancy, I get/got my health-related pregnancy information from a doctor <sup>d</sup>	81.8% (9)	96.9% (31)	78.6% (22)	0.087
I get my health-related pregnancy information from family <sup>d</sup>	54.5% (6)	53.1% (17)	57.1% (16)	0.952
During my pregnancy, I get/got my health-related pregnancy information from friends <sup>d</sup>	36.4% (4)	37.5% (12)	39.3% (11)	0.982
During my pregnancy, I get/got my health-related pregnancy information from the internet <sup>d</sup>	27.3% (3)	46.9% (15)	60.7% (17)	0.160
During my pregnancy, I get/got my health-related pregnancy information from a midwife/doula <sup>d</sup>	0.0% (0)	15.6% (5)	17.9% (5)	0.334

Responses show those who “strongly agree” or “agree” with questions

<sup>a</sup>Asked of respondents who are currently or intending on being pregnant (Baseline *n* = 8; Year 1 *n* = 22; Year 2 *n* = 24)

<sup>b</sup>Disagreement was measured through those who “strongly disagree” or “disagree”

<sup>c</sup>Asked of respondents who are currently pregnant (Baseline *n* = 4; Year 1 *n* = 18; Year 2 *n* = 17)

<sup>d</sup>Asked of respondents who are currently or previously been pregnant (Baseline *n* = 11; Year 1 *n* = 32; Year 2 *n* = 28)

potential uses of a targeted digital intervention to improve positive pregnancy outcomes and decrease low birthweight among Black women.

## Conclusions

Low birthweight is a health problem with disparities clearly marked down racial lines. Progress to reduce these disparities has been slow, with the percentage of low birthweight infants among Black women continuing to stay far higher than infants from their white counterparts (Gavin et al. 2018). Black women face various obstacles to having a healthy pregnancy, and health communications campaigns should adopt a targeted approach that speaks directly to the audience with messaging and images that are relevant to their specific experiences. Future studies should examine the impact and feasibility of using culturally-appropriate digital interventions that directly address Black women and their specific experiences during pregnancy (Tables 1, 2, 3).

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## Compliance with Ethical Standards

**Conflict of interest** The authors declare that they have no conflict of interest.

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