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Culturally Tailored and Community-Based Social Media Intervention to Promote Organ Donation Awareness among Asian Americans: “Heart of Gold”

LAURA A. SIMINOFF,
KARIKARN CHANSIRI*,
GERARD ALOLOD,
HEATHER M. GARDINER

Department of Social and Behavioural Sciences, College of Public Health, Temple University, Philadelphia, Pennsylvania, USA

Abstract

Organ donation disparities among ethnic minorities have persisted for decades, especially among Asian Americans (AAs). AAs represent a substantial proportion of the national transplant waitlist but have historically had the lowest organ donation rate in the United States. Community based and culturally tailored (CBCT) interventions are needed to increase donor designation within AA communities. In collaboration with local AA organizations and representatives and national partners, we developed a culturally and linguistically tailored video using a family appeal to promote donor designation among AAs. The video was distributed on social media platforms in two stages from February 17 to September 17, 2021 and tracked Reaches, Impressions, Views, and Engagements as part of a larger evaluation. The results revealed higher social media activities and engagements on Facebook than on Instagram with and without paid advertisements, although the paid approach yielded 5 to 16 times higher viewer engagement. Over six months, the video reached 36,845 AAs and gained 53,308 Impressions, 20,139 Views, 2,455 Engagements, and 232 visits to the organ donation registration page. The findings indicated Facebook and CBCT approaches as effective communication strategies to potentially raise AAs’ organ donation awareness, especially among AA females over 45 years of age. Implications and limitations are discussed.

Organ transplantation is the most effective treatment for end-stage organ failure (HRSA, 2020). Of 106,110 Americans on the national transplant waiting list, over 60% are ethnic minorities, including 9,093 Asian Americans (AAs) – the fastest growing ethnic group

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*Address correspondence to Karikarn Chansiri, Siminoff Research Group, Temple University College of Public Health, 1700 N. Broad Street, Suite 417, Philadelphia, PA 19121, USA. karikarn.chansiri@temple.edu.

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Supplementary Material

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in the US (Budiman & Ruiz, 2021). AAs' need for transplants is disproportionate to their representation in the population. AAs lag behind other minorities in the number of transplants received and willingness to donate. In 2021, 2.6% of donors were AA, compared to 65.5% white, 15.7% black, and 14.7% Hispanic; of the 41,355 transplants performed in 2021, AAs received only 2,236 (U.S. DHHS, 2022).

AAs' low organ donation rates are attributable to low organ donation knowledge, distrust in health care, and sociocultural values, such as the Confucian belief in body integrity after death (Li, Hillyer, Husain, & Mohan, 2019). Targeted messaging and involving AAs in intervention design and implementation are needed to increase organ donation awareness among this population. Social media are a cost-effective way to reach diverse audiences across physical locations (Gordon, Shand, & Black, 2016) and health issues (Bonar et al., 2020; Han, Lee, & Demiris, 2018; Naslund et al., 2017). The technology is particularly useful for distributing information to traditionally hard-to-reach populations (Gordon et al., 2016).

Low awareness of organ donation is partially responsible for negative attitudes, beliefs, and concerns about donation, resulting in low organ donation registration rates among AAs (Li et al., 2019). Social media interventions could effectively promote AA organ donation awareness and registration, as 94% utilize social media to seek and receive health information (Islam et al., 2016; Pew Research Center, 2012). An intervention that utilized Facebook, for example, resulted in a 21-fold increase in donor registration (Aykas, Uslu, & im ek, 2015; Callender & Miles, 2010; Feeley & Moon, 2009) compared to a 4–7% increase using traditional media tools, such as TV, billboards, and radio (Cameron et al., 2013; Stefanone, Anker, Evans, & Feeley, 2012).

While social media reach is impressive, most donation interventions are not community-based or culturally tailored (CBCT) (Cameron et al., 2013). CBCT practices encourage active participation from target audiences, integrate feedback and sociocultural values into all intervention phases, and support community involvement as part of long-term engagement strategies (Britt, Britt, Anderson, Fahrenwald, & Harming, 2020; McPhail-Bell et al., 2017). Ethnic minorities often perceive traditional interventions (i.e., one-way communication from researchers to target audiences) as not hearing their voices (McPhail-Bell et al., 2017). When allowed to participate in the design and implementation of social media interventions, ethnic minorities have reported meaningful connections with campaigns (Britt et al., 2020), adaptive attitudinal and behavioral changes (McPhail-Bell et al., 2017), and greater willingness to disseminate intervention content (Centola, 2010, 2011).

One example is *Infórmate*, a campaign promoting living kidney transplantation among Latinx Americans on Twitter and Facebook (Gordon et al., 2016). *Infórmate* integrated Latinx community stakeholders and their sociocultural values to convey culturally sensitive messages through soap operas, videos, and images of Latinx clinicians, donors, and recipients. With paid advertisements, the campaign reached 91,864 Facebook users with 2,267 clicks to the *Infórmate* website over 30 days and resulted in 31,263 Twitter Impressions with 108 clicks to the website over one week. A similar Facebook campaign targeting the Latinx community reported 100,000 Impressions over one month (Murphy

et al., 2020). No previous social media campaigns that promote organ donation have specifically targeted AAs to our knowledge.

Herein, we describe the development and evaluation of the “Heart of Gold,” CBCT social media intervention targeting AAs. To ensure the intervention’s cultural appropriateness, we partnered with local AA-serving communities in the Philadelphia metropolitan area and national partners (e. g., Gift of Life Donor Program). We sought community input on sociocultural beliefs, values, immigration status and acculturation, and organ donation knowledge, which are known predictors of donation attitudes and behaviors (Albright et al., 2005; Li et al., 2019). A narrative animation was chosen based on the Cognitive Theory of Multimedia Learning (Mayer, 2005) and empirical studies (Adam et al., 2021; George, Moran, Duran, & Jenders, 2013; Meppelink, van Weet, Haven, & Smith, 2015) suggesting animation’s effectiveness in health interventions among ethnic minorities, including those with limited literacy especially when an animation is wordless (Adam et al., 2021; Meppelink et al., 2015). This communication form reduces interpretation biases associated with individuals’ psychological differences in textual information processing (Adam et al., 2021). The ‘Heart of Gold’ animation is designed without textual or verbal narration and employs a family approach to organ donation decisions and the communal benefits of organ donation.

The intervention’s primary aim was to promote organ donation awareness among AAs at the population level through subsequent social media activities and engagement. The secondary aim was to assess AAs’ organ donation registration after exposure to the intervention.

Materials and Methods

Heart of Gold Animation Development

Development of the Heart of Gold intervention began in September 2019 with the help of a 12-member community advisory board (CAB) comprised of individuals from three local AA organizations in Philadelphia representing diverse Asian ethnic groups. The CAB met bi-monthly to provide perspectives on all aspects of the study, from reviewing recruitment materials and translating documents to beta-testing study instruments and informing interpretation of study findings. CAB members actively participated in the animation’s design and storyline, viewing iterative versions. The CAB’s guidance on the visual content, such as the symbolic meaning of colors and culturally salient imagery, helped ensure that the final product was culturally tailored and unambiguous about the identity of the animation’s characters. CAB members identified potential social media platforms for distribution and participated in a final survey assessing the animation’s cultural acceptability and appropriateness.

The animation content was informed by a qualitative focus group study (Siminoff, Bolt, Gardiner, & Alolod, 2019) and a national survey of AAs (Alolod, Gardiner, Blunt, Yucel, & Siminoff, 2022) conducted by the research team. These studies suggested that respondents overwhelmingly considered organ donation a family decision and identified a hierarchy of decision makers, with older family members’ opinions about organ donation taking

precedence. Thus, the current animation features a family discussion and older family members leading the decision to donate the organs of a deceased family member.

The animation, although based on input from individuals living within the Philadelphia region, is likely to have reasonable generalizability. In line with the national distribution of Asian ethnicities, Philadelphia's four largest AA groups are Indian, Chinese, Vietnamese, and Filipinos (Budiman & Ruiz, 2021), and we drew on these groups while developing the animation. Mirroring the national population, about half (52%) are female, and more than one-third are greater than 50 years old (APIA Vote, 2020; PSSHE, 2018).

The animated format was selected for its simplicity and because it relied wholly on visualization rather than spoken language. Research indicated that animation improved information recall among low health literacy populations (Meppelink et al., 2015). Animation is also an excellent way to communicate complex health topics such as organ donation with ethnic minorities and those with low English language skills (Li et al., 2019; Meppelink et al., 2015).

The animation does not have dialogue, runs a total of 2:15 minutes, and integrates culturally sensitive visual content, such as recognizably Asian household elements. We targeted AAs older than 45 years based on the CAB's feedback and our previous studies indicating older family members as influential in the organ donation decision (Alolod et al., 2022; Siminoff et al., 2019). The animation closes by inviting audiences to share the video with family and friends using written text in English, Chinese, Korean, and Vietnamese. Viewers are then directed to Donate Life America's website, where they are prompted to complete an online survey assessing age, race, place of birth, and donation willingness, and encouraged to register as organ donors. See this link for the full animation.

A Two-stage Social Media Strategy

A two-stage strategy was employed to distribute the animation on Facebook and Instagram. We leveraged the CAB's existing networks in the first stage and assessed the number of AAs the intervention could reach organically. From February 17 to 23, 2021, CAB members shared the animation link on their organizations' or personal social media accounts. An e-mail reminder, including communication guidelines and sample text for sharing the animation, was sent to CAB members on February 17. Social media engagement and activities, including Reaches and Impressions, Views, and Engagements, were collected until May 17, 2021.

Best practices have demonstrated the importance of an established social media presence (CDC, 2010), so we launched the Asian Americans Health Disparities Facebook and Instagram accounts three months before the first animation launch (February 17, 2021). The purpose was to create a space where social media users could naturally view and engage with the animation. Before initiating the first stage, articles about AAs' organ donation rates and general health were posted on important Asian holidays and between 9 a.m. to 3 p.m. ET, which Facebook and Instagram suggested as having yielded high engagement and activities. Our accounts liked and followed similar accounts to encourage others to follow us back. When the first stage began, the Facebook account had 27 followers and 21 likes, and

the Instagram account had 300 followers. Teasers leading up to the release of the animation were disseminated on our Facebook and Instagram pages to build anticipation for the launch.

The second stage implemented a paid approach. From June 17 to September 17, 2021, we purchased paid advertisements on Facebook and Instagram and garnered support from our national partners to reach AA communities across the United States. Social media platforms do not enable advertisers to target their audience based on race to prevent discrimination. Thus, we used alternative parameters, including Location (i.e., living in the US), Age (more than 45 years), and Behaviors (i.e., having lived in an Asian country or was an expat there) to ensure the likelihood of reaching older AA viewers. An e-mail reminder requesting to share the animation was sent out to our national partners on May 17, 2021. All partners were advised to adjust the wording of the posts to fit their audiences and were encouraged to share in their native language.

Key Performance Indices

Four key performance indices (KPI) based on previous studies (Gupta, Tyagi, & Sharma, 2013; Mehmet, Roberts, & Nayeem, 2020; Young, Soliz, Xu, & Young, 2020) were selected to evaluate the effectiveness of our social media strategy. Those include Reach and Impression, View, Engagement, and Audience Analysis. Reach captures the number of unique social media users who have seen the post. Impression represents the number of times the animation appeared on social media users' screens, with a single viewer potentially generating multiple Impressions.

The KPI View indicates the number of times social media users have viewed the animation. Facebook provided the number of Views for at least 3 seconds, 10 seconds, and 1 minute, whereas Instagram provided only 3-second View data (Meta for Business, 2022). We collected data of 3-second and 1-minute Views on Facebook and 3-second Views on Instagram. We also assessed the average watch time and View-Through-Rate (VTR), calculated as the number of unique Views divided by the total Reach as a percentage, to understand the amount of attention the animation received from viewers. Relative Attention was assessed as the average percentage of the animation viewed by Facebook users compared to other videos of similar lengths. Instagram did not provide the VTR or Relative Attention metrics. We also assessed ThruPlays, the number of Views for at least 15 seconds or to completion, which was provided by Facebook only when paid advertisements were applied.

Regarding Engagement, we collected data about passive Engagement (i.e., Engagement in a non-user-generated manner), such as liking and clicking, and active Engagement (i.e., user-generated content participation), such as commenting and initiating a new discussion thread. We also assessed the Engagement Rate or the total number of Engagements divided by the number of total posts on our Facebook or Instagram divided by Reach as a percentage. Average industry Engagement Rates are 0.13% on Facebook and 0.83% on Instagram (Jipa, 2021). Audience Analysis included demographics of social media users reached as collected by the platform. This metric is provided only with paid advertisements.

Results

Stage One: Organic Approach (February 17 – May 17, 2021)

Reach and Impression—With only the CAB’s existing networks, the animation reached more users ($N = 2,634$) and generated more Impressions ($N = 4,174$) on the Facebook platform than it did on Instagram ($N_{reach} = 207$, $N_{impression} = 270$) (see Table 1). The Reach number on Facebook is 84 times higher than the number of our Facebook page followers ($N = 31$) and 109 times higher than the page’s likes ($N = 24$), while Instagram’s Reach is 1.5 times less than our Instagram page’s followers ($N = 300$).

Views—The animation received higher 3-second Views on Facebook ($N = 1,233$) than Instagram ($N = 320$). The View-Through-Rate (VTR) on Facebook was 31%, which is slightly higher than the industry average (30%) (Cameron, 2021). The number of 1-minute Views was 113, indicating that only 4% of reached Facebook users watched the video to the halfway point. Most Facebook users (71%) started to drop off at 21 seconds.

Compared to other Facebook videos of the same length, the animation had an 8% lower audience retention rate at 21 seconds. Retention among Facebook users peaked at 14 seconds. The average watch time for all Facebook users was 8 seconds, whereas that of our Facebook followers is higher at 32 seconds. Instagram did not provide retention or watch time data.

Engagement—While the Facebook page had 31 followers and 24 likes and the Instagram page had 400 followers at the end of the first stage, the Facebook animation post gained higher Engagements (474 in total) with 131 likes, 48 shares, 5 comments, and 290 post clicks than our Instagram post (69 Engagements in total with 25 shares, 44 likes, and zero comments). The Engagement rates were 53% on Facebook and 33% on Instagram, which are higher than the industry averages (0.13% on Facebook and 0.83% on Instagram) (Jipa, 2021). However, we observed more passive Engagements on Facebook and Instagram (i.e., likes, shares, and clicks) than active Engagements (i.e., commenting).

Stage Two: Paid Approach (June 17 to September 17, 2021)

Reach and Impression—With paid advertisement, the video reached greater numbers of Facebook ($N = 32,579$) than Instagram users ($N = 4,276$) and generated more Impressions on Facebook ($N = 37,444$) than Instagram ($N = 15,864$). The Reach of the paid Facebook post was 12 times higher than the organic approach, and the Reach on Instagram was 21 times higher. See Figure 1 for the change of Reaches and Impressions over the intervention period.

Views—The video received more 3-second Views on Facebook ($N = 19,754$) than Instagram ($N = 385$) and had 90% ThruPlays on Facebook. The high percentage is likely from Views for at least 15 seconds rather than complete Views considering that the average watch time for all users was only 11 seconds, and the total number of Views at one minute was only 188. The average watch time for followers remained 32 seconds as we did not gain new followers from paid advertisements.

Similar to our results from the organic approach, most Facebook users dropped off at 17 seconds. Compared to other videos on Facebook with the same length, our animation had 83% lower retention at 17 seconds. The video retention peaked at 14 seconds before organ donation was introduced, similar to the organic approach's findings. Instagram provided data on neither the average watch time, ThruPlays, nor the dropoff point. See Figure 2.

Engagement—The paid Facebook account gained 8 likes (32 in total) with no new followers. The Instagram account gained 107 followers ($N=407$ in total). Facebook had higher Engagements ($N=2,392$ in total) with 127 reactions (i.e., likes/loves), 30 shares, 9 comments, and 2,226 post clicks compared to Instagram ($N=63$ Engagements in total, with 31 likes, 29 shares, 2 comments). Engagement on all social media platforms was more passive than active. The Engagement rate on Facebook was 10% compared to 2% on Instagram, which both are higher than the industry averages (i.e., 0.13% on Facebook and 0.83% on Instagram) (Jipa, 2021). See Figure 3.

Audience Analysis—Of the audience reached, 63% on Facebook and 67% on Instagram were women. As we targeted AA aged over 45 years old, Facebook and Instagram provided data for the three age ranges: 45–54, 55–64, and more than 65 years old. Most of our Facebook audience was 55 years or older (73%), whereas that of Instagram was 45–54 years (55%). Most Facebook users (98%) engaged with the video through mobile in-stream video (i.e., watching the animation as an ad before other Facebook videos users typically watch). Only 2% watched the video through a mobile app news feed. About 99% of Instagram users engaged with the animation through their Instagram stories, whereas only 1% did so via their Instagram feed.

The top three View locations on Facebook and Instagram were California, Texas, and New York. The next top locations for our Instagram audience were mostly states along the East Coast, such as New Jersey, Florida, and Georgia, whereas the locales of the Facebook audience were diverse, such as Hawaii, Illinois, and Florida. See Online Supplement A for the full list of Facebook and Instagram users' geographical locations. See Figure 4 for audiences' demographics and Figure 5 for audiences' geographical locations.

Secondary Objective: Organ Donation Registration

The Donate Life America registration page received 53 visits during the organic approach and 179 visits during the paid approach, with zero organ donation registrations.

Discussions and Implications

The data suggests the usefulness of social media platforms, especially Facebook, in raising AAs' awareness of organ donation via social media activities and engagement, which have significantly predicted health attitudinal and behavioral changes (Centers for Disease Control and Prevention [CDC], 2010), including organ donation registration (Cameron, 2015). At the end of the intervention in September 2021, our animations on Facebook and Instagram have reached 36,845 AAs and gained 53,308 Impressions, 2,455 Engagements, and 20,139 Views. The numbers are 5 to 16 times higher than those from our first-wave intervention utilizing the CAB's existing networks to distribute the intervention. These

findings indicate that paid advertising is more effective than relying on organic networks to distribute information about organ donation.

The current intervention received fewer complete Views of the animation, even with paid advertisements, and zero organ donation registrations. The results are not unexpected, considering that AAs express low interest in learning about organ donation (Li et al., 2019), and a single exposure to a short animation on social media may not solve the complexities of organ donation attitudes and behaviors among AAs, who have the lowest organ donation rate in the United States (HRSA, 2021). Another potential explanation for the no registrations is that registration as an organ donor requires important documents (e.g., driver's license or other ID), which AAs may not have been prepared to provide immediately after viewing the video. Donate Life America's registration page is only available in English, making limited literacy another possible explanation for zero registration, as 30.9% of AAs are not fluent in English (U.S. Department of Health & Human Services). Nonetheless, 179 AA individuals visited the registration website after exposure to the animation. Considering the donor shortage and that one person can donate up to eight organs (Gordon et al., 2016), the 179 visits are meaningful. The current findings suggested the following implications.

Facebook Should Be Prioritized to Promote Organ Donation Awareness among AAs

The Facebook platform had greater Reach, Impression, Views, and Engagements than Instagram for organic and paid approaches. The findings are consistent with previous studies indicating AAs' greater use of Facebook for health information and daily social interactions than other social media platforms, especially among older AAs (Charmaraman, Chan, Chen, Richer, & Ramanudom, 2018; Islam et al., 2016; Pew Research Center, 2012; Yang, Tsai, & Pan, 2020).

Although Instagram was less effective, current findings may not be generalizable to the newer Instagram Live feature not utilized during our intervention. Live features have demonstrated effectiveness across social media platforms, such as IG, Facebook, and Tik Tok, in attitudinal changes, as users can interact with content creators in real-time (Qiu, Zuo, & Zhang, 2021) and are potentially more persuasive than less interactive content (Giertz et al., 2021). Future studies could compare the effectiveness of these formats in promoting organ donation.

Further Investigations are Needed to Understand Why AAs Stopped Watching the Animation

Our data from both organic and paid approaches suggested that most AAs stopped watching the animation within 17 to 21 seconds – the scene where the doctor suggests organ donation to the family. The audience retention rates at the scene are significantly lower than in other Facebook videos of the same length. A human's attention span toward a video, which lasts 8 to 12 seconds on average (Velho, Mendes, & Azevedo, 2020), could explain AAs' withdrawal from the animation. The numbers could be lower if a video is not the audiences' topic of interest (Velho et al., 2020). Considering AAs' low awareness of organ donation, the dropoffs are understandable.

Given that the animation is a narrative, another potential explanation for AAs' withdrawal is grounded on narrative theories. Individuals tend to be engaged in a narrative if they perceive the events depicted can happen in their own lives (Gebbers, De Wit, & Appel, 2017) or are related to their existing memories (Chen, Bell, & Taylor, 2016; Escalas, 2007). AAs may have found the animation or some part of it unrealistic or unrelatable since most social media users have likely never engaged in authorizing organ donation of a deceased family member or experienced a similar type of death within their family; less than 1% of hospital deaths are eligible for organ donation (Ferhatoglu & Yapici, 2019).

A shorter video or one in which the organ donation scene is moved earlier in the video would help determine whether the animation's length or content was associated with the dropoff. Future research could use a panel of AA viewers to provide specific feedback after watching the animation. Post-exposure surveys grounded on narrative theories to assess AAs' perceived realism and self-relevance to the animation may be helpful.

Strategies to Increase Active Social Media Engagement are Needed to Promote Actual Changes in Organ Donation Behaviors and Attitudes among AA

Active social media Engagements (e.g., commenting) have significantly predicted attitudinal and behavioral changes more than other key performance indices, such as Reaches and Impressions (Shawky, Kubacki, Dietrich, & Weaven, 2019). Although our intervention revealed higher Facebook and Instagram Engagement rates than the industry averages, most Engagements were passive (e.g., liking and clicking). We also received no organ donation registrations with paid advertisements, consistent with prior evidence indicating the relationship between low active social media Engagements and few to no changes in health behaviors (Centers for Disease Control and Prevention (CDC), 2010).

A strategy to increase active Engagement is to increase the number of followers of an intervention's social media page. Our data revealed that some social media activities (e.g., the average watch times) were higher among page followers than non-followers for organic and paid approaches. The findings indicated that being familiar with an intervention's social media account is likely associated with more active Engagement. Another strategy is to use open-ended questions to start discussion forums, which is likely effective among AAs. AAs value collectivism and in-group connections and may be actively engaged in a social media post if other AA users are. Multiple exposures to the animation over time may also be helpful.

Social Media Interventions Should Target AA Females as the Priority Audience

Our Audience Analysis metrics revealed that Facebook and Instagram users touched by our intervention are women more than men, aligned with a Facebook intervention targeting Latinx, which indicated females as their mostly reached audiences (Murphy et al., 2020). The current findings also extended studies suggesting higher enthusiasm for organ donation among Polish women than men (Kobus, Piotrowska, Malyszko, Bachorzewska-Gajewska, & Malyszko, 2014) into AA females' greater potential to interact with organ donation social media interventions than their male counterparts.

We suggest gender-specific messaging strategies to draw AAs' attention, such as an animation depicting female characters as donors or recipients. Messages tailored to audiences' demographic characteristics tend to be more persuasive than non-tailored messages (Noar, Harrington, & Aldrich, 2016). Although women were our primary audiences, future interventions should not omit AA men. The population is at high risk of developing liver diseases (CDC, 2016); yet, AAs' median wait times for liver transplants are longer than other ethnic minorities (Organ Procurement and Transplantation Network, 2016). Interventions targeting AA men may specifically design messages about liver donation. Replication studies are needed to understand how gender predicts AAs' engagement with social media interventions for organ donation.

In addition to gender-specific messaging, future social media interventions are advised to target AAs in California, Texas, New York, and East Coast states for cost-effectiveness. Future Facebook interventions may be able to target more diverse audiences compared to Instagram interventions. The current findings revealed that the top-ten locations of AA reached by our Facebook intervention are from the West Coast, Midwest, and East Coast, whereas those reached by our Instagram intervention are more limited on the East Coast.

Future Interventions Should Distribute Video as a Facebook Reel or an Instagram Story Instead of a News Feed

The Audience Analysis metrics revealed that most AAs viewed the animation when it was inserted among other videos to which AAs were typically exposed (e.g., videos from their friends) more than when it was presented as a social media feed requiring AAs to click to play the animation. The findings are predictable considering AAs' low enthusiasm for learning about organ donation and negative attitudes toward the topic (Li et al., 2019). Presenting a video intervention that AAs can be exposed to without an active attempt may increase their activities and engagement with the content.

Finally, community-based and Culturally Tailored Approaches are an Effective Theoretical Framework for AA Organ Donation Interventions

The current findings extended evidence regarding the effectiveness of CBCT social media practices in promoting organ donation awareness among ethnic minorities such as Hispanics (Gordon et al., 2016; Murphy et al., 2020) into AAs. The current intervention cost \$600 to reach 36,845 AAs, indicating the low-cost effectiveness of CBCT animations in promoting organ donation awareness compared to previous interventions featuring text-based, non-CBCT social media messages (Cameron et al., 2013). Although text-based messages require a lower production cost, the persuasion effects may be less pronounced as CBCT visual aspects (e.g., an AA family dining scene) cannot be integrated, resulting in lower audiences' emotional responses and less interest in the content.

Our study represents effort and collaboration among AA community leaders in Philadelphia and national organizations in actively integrating AAs' sociocultural values into the animation's design and distribution. Being exposed to the animation emphasizing a family appeal, AAs might perceive that their sociocultural values were heard and engage in our intervention. To effectively communicate organ donation with AAs and ethnic minorities on

a larger scale, the use of social media platforms in future interventions hold promise because they can reach diverse populations regardless of healthcare access and geographic locations and enhance CBCT practices through partnerships in the audience's communities.

Future Research and Limitations

This study was the first to assess AAs' attitudes and awareness about organ donation before or after viewing a social media intervention. Future research should assess AAs' pre-post attitudes to increase internal validity. A follow-up survey among AA social media users would explain whether AAs sign up or encourage their family members to register as organ donors.

The current study resulted in only 30 AAs completing an online survey after watching the animation. Future studies could be conducted in controlled environments where participants are deliberately asked to view the content and fill out pre- and post-attitude surveys.

We did not measure the underlying mechanisms of the intervention's effectiveness. Future studies should assess potential mediators grounded on narrative theories, such as perceived realism and self-relevance. This study could not guarantee whether the viewers were AAs or those interested in AA cultures, as social media platforms do not enable advertisers to target their audience based on race to prevent discrimination. However, we utilized advertising parameters (e.g., having lived in Asian countries) to ensure the likelihood of reaching AA viewers. We acknowledge that our study could comprise the targeted ethnic groups along with individuals interested in the targeted groups' cultures.

Finally, we did not have a control group. Whether omitted variables may confound AAs' social media activities and engagement with our content remains unclear. A randomized controlled trial with a control non-CBCT social media intervention would likely reduce the internal validity threats. Despite these limitations, our current study is the first to implement a social media intervention of organ donation specifically targeting AAs with effectiveness.

Conclusion

The Heart of Gold intervention demonstrates the effectiveness and limitations of a Facebook-based intervention and CBCT practices in raising social media activities and engagement with organ donation content among AAs, especially females older than 45 in California, New York, and Texas. Despite the demonstrated effectiveness of our social media strategy, further studies are needed to understand AAs' withdrawal from the animation, potential mediators and moderators, and the animation's impact on organ donation attitudes and behaviors. Communication strategies to increase active social media engagement are needed considering that engagement is a significant predictor of behavioral changes and that the current intervention yielded zero organ donation registration and low numbers of completed views.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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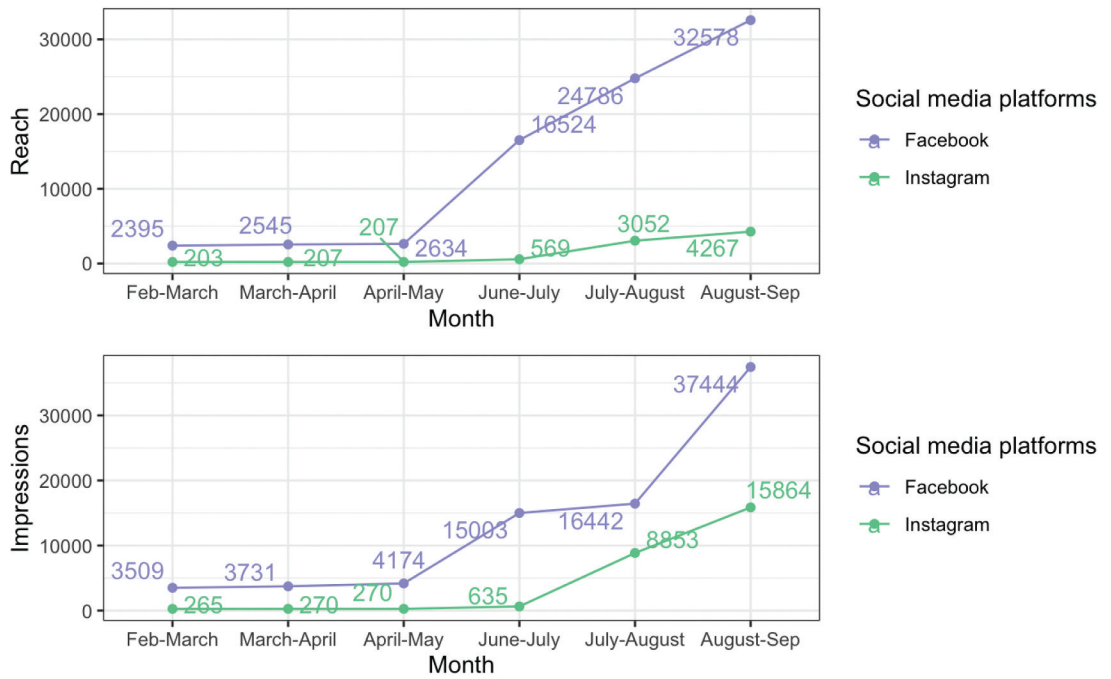


Figure 1.
Reach and impressions for the organic and paid approaches.

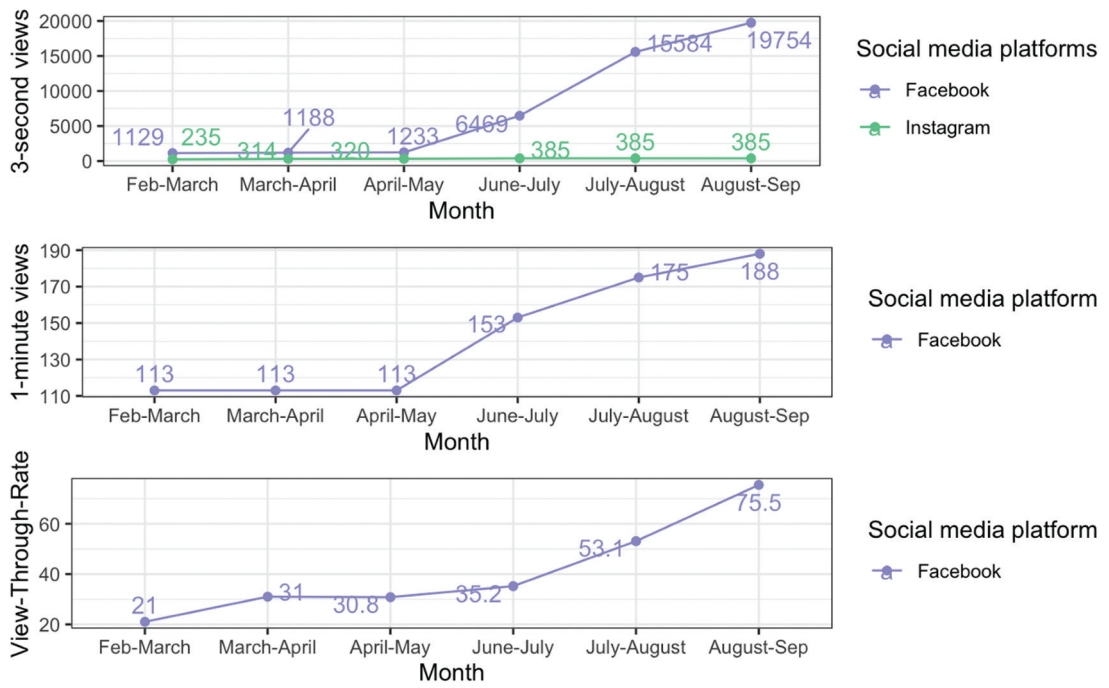


Figure 2. Views and view-through-rate on Facebook for the organic and paid approaches.

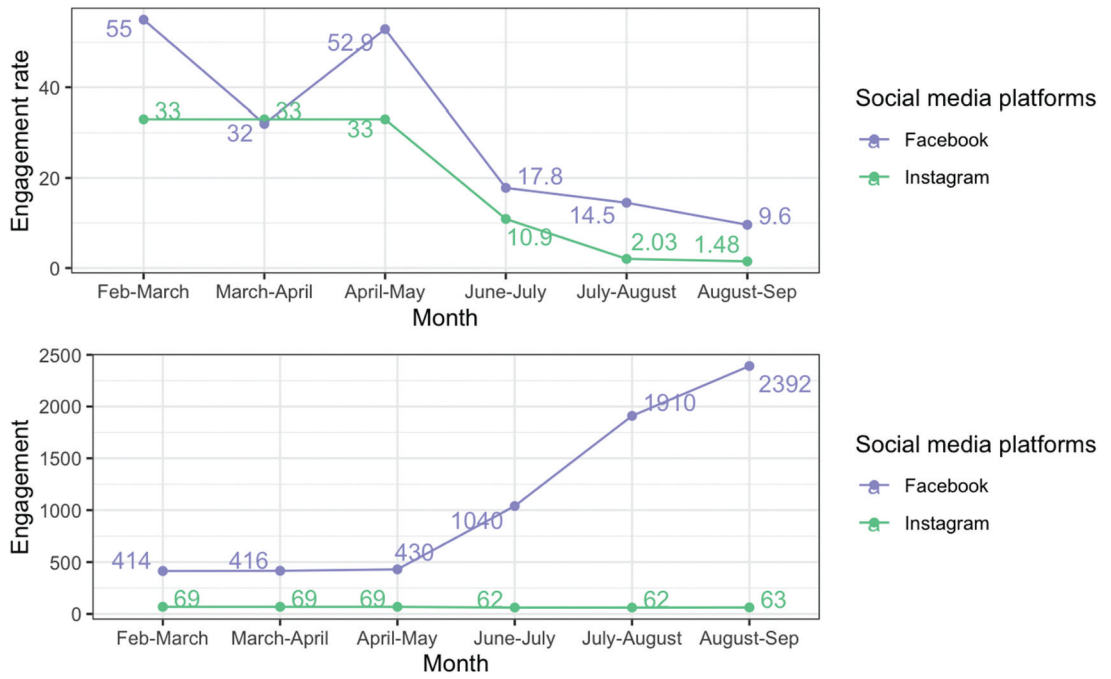


Figure 3. Engagement and engagement rates for the organic and paid approach.

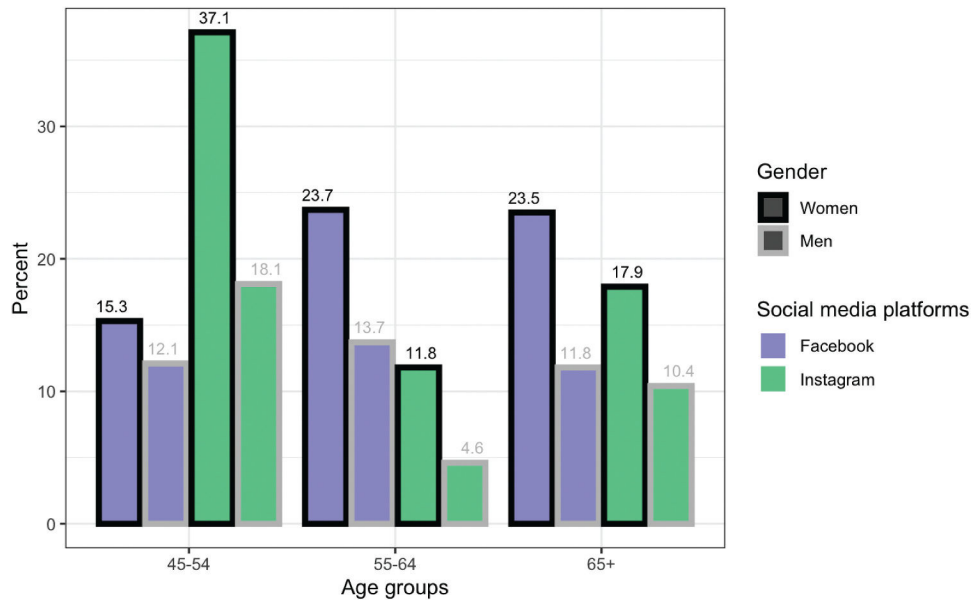
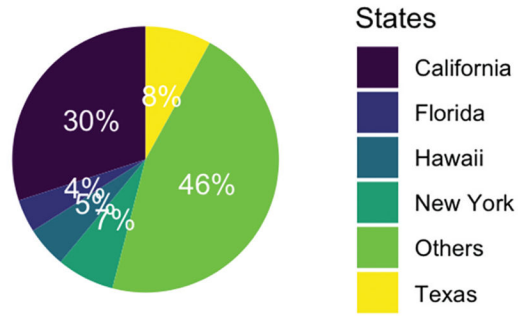


Figure 4.
Audiences' demographics for the paid approach.

Top Five Locations of Facebook Audiences



Top Five Locations of Instagram Audiences

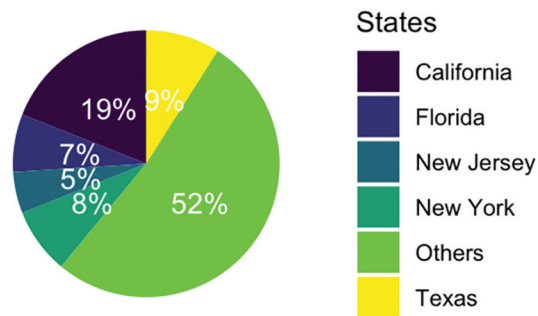


Figure 5. Audiences' locations for the paid approach.

Table 1.

KPIs for the organic and paid approaches

Social media platforms				
KPIs	Organic (02/17/21–05/17/21)		Paid (06/17/21–09/17/21)	
	Facebook	Instagram	Facebook	Instagram
Reach	2,634	207	32,578	4,267
Impression	4,174	270	37,444	15,864
Views	1,233	320	19,754	385
View-through-rate	31	NA	76	NA
Engagement	430	69	2,392	63
Engagement rate	53	33	10	2

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