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RESEARCH

In pursuit of a community-informed group prenatal care model for telehealth use

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SUMMARY

Group prenatal care is increasingly being used to improve maternal and infant physical and mental health outcomes. We assessed COVID-19–related changes in prenatal care, economic circumstances, and social needs of low-income pregnant and parenting persons to inform adapting a group prenatal care program enhanced with education, care coordination, and other support for use with telehealth. This study offers tangible ways to design and enhance telehealth group prenatal care to address the priorities identified by low-income families while incorporating limitations and requirements of medical care delivery systems. Telehealth group prenatal care programs can be implemented to increase access to health care, resources, and social connection during and after the pandemic.

Key Words

Prenatal care; COVID-19; telehealth; maternal health

ABSTRACT

Background

Group prenatal care is increasingly being used to improve maternal and infant physical and mental health outcomes. We assessed COVID-19–related changes in prenatal care, economic circumstances, and social needs of low-income pregnant and parenting persons so that we could adapt an existing group prenatal care program for telehealth use.

Aims

The primary aims of this study were to assess COVID-19–related changes in economic circumstances and social needs of families, and modify accordingly a current group prenatal care model to be used in telehealth in an underserved community with traditionally limited access to technological services.

Method

From July–November 2020, we conducted qualitative interviews with 62 low-income, Latinx or Black pregnant and parenting persons. We collected data systematically as digital audio recordings,

then organised and analysed the data using a grounded theory approach. Participants expressed willingness to attend virtual group prenatal care appointments and measure their own blood pressure, weight, and fetal heart tones if training and support were made available. Most participants reported having internet connectivity to facilitate telehealth delivery (88 per cent had reliable internet; 95 per cent had a tablet or smartphone). Participants emphasised increased need for social connection, mental health assessments and services, and warm handoffs (personalised transfer of care) to local support agencies. We developed a list of specific telehealth components to facilitate implementation in low-resource settings.

Conclusion

Delivering group prenatal care virtually is an appealing option during and beyond the COVID-19 pandemic to address social isolation and other issues facing pregnant and parenting persons. This study offers tangible ways to enhance group prenatal care to address the needs of low-income families. Telehealth programs should be implemented to increase access to a group prenatal care model that increases access to resources and improves social connection during and after the pandemic.

BACKGROUND

Prenatal care in the US has changed dramatically since the onset of the 2019 novel coronavirus (COVID-19) pandemic. Prior to the outbreak, the American College of Obstetricians and Gynecologists (ACOG) recommended 12–14 visits,[1] which typically took place in person. In 2020, ACOG released new recommendations that providers institute a minimum of five in-person visits[2] supplemented by telehealth appointments.[3] These changes may remain for the foreseeable future, and may exacerbate racial/ethnic and socioeconomic disparities in prenatal care, given barriers to telehealth use among low-income populations.[4,5]

Group prenatal care (GPNC), which consists of health assessments, education, and facilitated peer support among pregnant persons with similar due dates, is increasingly being implemented to improve maternal and infant health outcomes.[6] However, GPNC presents unique challenges in the context of COVID-19 and social distancing policies, as it requires in-person group meetings of 8–12 patients, up to two facilitators, and one prenatal care provider.[7,8] We sought to address these challenges, as well as the logistical hurdles that patients are facing, by suggesting adaptations to a GPNC model developed and being used in Fresno, CA, for telehealth use in low-income settings.[9]

METHOD

Study Context

This sub-study is part of a larger study entitled "Engaging Mothers & Babies; Reimagining Antenatal Care for Everyone" (EMBRACE), which is comparing two forms of enhanced prenatal care—Glow! Group Prenatal Care and Support (Glow/GC) and individual prenatal care with Comprehensive Perinatal Services Program (CPSP) enhancements—for low-income pregnant persons in California's Central Valley. After pausing EMBRACE recruitment in March 2020 because of COVID-19, we initiated this sub-study to determine how best to adapt Glow/GC for telehealth.

Glow/GC was originally developed between 2015–2018, in response to community concern over poor birth outcomes.[10] In addition to providing GPNC, Glow/GC brings together social service agencies to provide onsite services targeted to low-income families. The Glow/GC program pairs a trained staff facilitator with a licensed prenatal care practitioner from a specific practice site to provide billable prenatal care to the practice's patients. Over the course of 10 sessions, 8–12 participants actively engage in prenatal health care, risk assessments, and social support, and gain

knowledge and skills related to pregnancy, birth, and parenting. A community agency, First 5 Fresno County (F5FC), administers Glow/GC. EMBRACE research staff assisted with the implementation of this qualitative study to support F5FC's effort to adapt the original Glow/GC model to address COVID-related restrictions in clinic settings. This partnership helped ensure that the program modifications were informed by community-based participatory research methodology.

Interviews

We interviewed EMBRACE participants who had enrolled in the study prior to the pandemic, and Black birthing people who had not enrolled in EMBRACE but had experienced prenatal care during the pandemic. Interview topics included the challenges and advantages associated with telehealth versus in-person care; how participants would view being asked to measure their own blood pressure, weight, fundal height, and fetal heart tones; and which form of prenatal care they would prefer to receive. The study team developed the initial interview guide, then reviewed with community Study Advisory Group members and modified to include their feedback. EMBRACE recruitment staff then screened, consented, and administered a sociodemographic questionnaire and conducted interviews via telephone or videoconference. Study participants received $50 as remuneration for completing the interview. We obtained International Review Board approval for all activities from California State University, Fresno, and the University of California at San Francisco.

Participants

Group 1: Forty participants who had enrolled in EMBRACE participated in this sub-study; no additional consent was required as the original EMBRACE consent form noted that the participant might be asked to participate in a qualitative study in the future. We used purposive sampling to ensure a balance of pregnant (n=20) and postpartum (n=42) participants, and out of the 40 EMBRACE participants, those who participated in CPSP (n=23) and Glow/GC (n=17). Eligibility criteria included the following: 1) ≤24 weeks' gestation; 2) English or Spanish speaking; 3) eligible for Medicaid (household income at or below 213 per cent of the federal poverty level); and 4) able to consent to study participation. Exclusion criteria included being unable to attend Glow/GC sessions at times they were planned or not planning to continue care at the study site. The recruitment team screened, consented, and completed baseline interviews onsite at participating clinics. For this sub-study, the EMBRACE recruitment team contacted participants who self-identified as Black, Latinx (White or Non-White), or multiracial with one of these identities.

Group 2: EMBRACE community engagement team members partnered with the Fresno County Black Infant Health program (BIH) to identify 40 BIH participants who were potentially eligible (as defined by meeting the EMBRACE inclusion criteria: ≥24 weeks gestation or had given birth and were <7 months postpartum; eligible for Medicaid) during pregnancy; and spoke English or Spanish. Twenty-two people elected to join the study.

Analysis

We collected and analysed data using a grounded theory approach.[13] Digital audio recordings from the qualitative component of the interviews were transcribed, coded, and organised using the Dedoose[14] software program by the research team and a community member coder. During biweekly data analysis meetings, the study team identified salient patterns due to their recurring nature (open coding). Discrepancies between the coders were discussed and resolved iteratively; the coding team included eight individuals who coded in teams of two. The quotes included in this article are each from unique participants, and the type of care (individual or group) is listed for context.

We collaborated with Glow/GC program staff (F5FC) to share findings and recommendations with a selection of stakeholders and study participants to develop tangible recommendations for modifying a GPNC model for telehealth application. F5FC used existing funding to offset costs for telehealth and remote monitoring of health status and implemented all recommendations that were feasible given their financial and staffing capacity.

RESULTS

The mean age of the 62 participants was 27.2 years (SD = ± 5.8). Most of the sample identified as Black (41.9 per cent), Latinx (40.3 per cent), or multi-racial/ethnic (17.7 per cent). Most participants completed high school (33.9 per cent) or had fewer years of education (24.2 per cent). Two-thirds (66.1 per cent) were married or living with their partner, and three quarters (75.8 per cent) were US born. Participants reported varying monthly incomes (<$1,000 to >$3,000) (Table 1).

1) Changing Needs of Participants and Families During Pregnancy Since the Pandemic

Compounded stressors may negatively affect the health and pregnancy experience of pregnant persons and increase the risk of poor infant health outcomes.[15,16] Participants reported that existing stressors they had been experiencing prior to the COVID-19 pandemic—namely, social isolation, mental health concerns, financial and food insecurity, and work insecurity—had increased in severity due to COVID-19.

Social Isolation: Before the pandemic, pregnant persons reported social isolation as a stressor and cited in-person GPNC as an essential resource.[17] In our study, participants indicated that COVID-19 and the resulting social distancing orders had compounded their feelings of isolation and substantially reduced their social support.

"I feel like I don't get time to myself, but I am lonely at the same time because I don't get time to myself, because I have my children or if I'm staying with my sister for the day. . . . Then I just feel lonely if I'm alone. No one's here to help me. It's a very confusing situation."—EMBRACE, CPSP

Participants also commented extensively on unmet expectations as a result of pandemic-related restrictions. Participants had envisioned what their prenatal care, celebrations, and birth experiences would look like and were distraught that the pandemic prevented these plans from coming to fruition.

"My friends, they were really close to me at the beginning of the pregnancy, they were like 'No, we are going to be there for you, organise the baby shower, and all that stuff.' But COVID just pushed everyone away. It was like, 'Man, I didn't get to enjoy this pregnancy with the people that I wanted how we all planned.'" —EMBRACE, Glow/GC

Mental Health: Mental health concerns, historically under-addressed during pregnancy, have become more pronounced for many individuals during the COVID-19 pandemic.[18] Participants reported that increased anxiety, stress, uncertainty, and disruptions of support systems have intensified concerns about pregnancy and delivery.

"I went through my pregnancy during COVID when we were having to be shut down and all that, so it was really making me depressed. . . . it just hindered us from being able to do the normal things we were able to do, like, we can't take our kids outside to play." —Non-EMBRACE

Table 1: EMBRACE Enhancement Qualitative Study, California's Central Valley (2020) pregnant/postpartum participants (n=62)

	All Participants	EMBRACE	Black Infant Health
Sociodemographic characteristics	**n** (%)	**n** (%)	**n** (%)
Age, mean ±SD	27.2 ± 5.8	26.7 ± 6.2	28.1 ± 4.9
Race/ethnicity			
Black	26 (41.9)	7 (17.5)	19 (86.4)
Latinx	25 (40.3)	25 (62.5)	0
Bi- or multi-racial*	11 (17.7)	8 (20.0)	3 (13.6)
Highest level of education			
Less than high school	15 (24.2)	11 (27.5)	4 (18.2)
High school graduate, GED or equivalent	21 (33.9)	16 (40.0)	5 (22.7)
Some college, junior college or vocational school	21 (33.9)	11 (27.5)	10 (45.5)
College graduate	5 (8)	2 (5.0)	3 (13.6)
Relationship status			
Married or living with partner	41 (66.1)	30 (75.0)	11 (50.0)
Significantly involved, but not living together	9 (14.5)	4 (10.0)	5 (22.7)
Single/not significantly involved	12 (19.4)	6 (15.0)	6 (27.3)
Country of Birth			
United States	47 (75.8)	25 (62.5)	22 (100)
Mexico	14 (22.6)	14 (35.0)	0
El Salvador	1 (1.6)	1 (2.5)	0
Monthly Household Income			
<$1,000	15 (24.2)	8 (20)	7 (31.8)
$1,000 to $2,000	19 (30.7)	11 (27.5)	8 (36.4)
$2,001 to $3,000	10 (16.1)	8 (20.0)	2 (9.1)
>$3,000	15 (24.2)	11 (27.5)	4 (18.2)
Don't know	3 (4.8)	2 (2.5)	1 (4.6)

*Participants were categorised as bi- or multi-racial if they selected Black and one or more race/ethnicity.

Perpetually changing clinical care and hospital policies were sources of anxiety for participants, as they reported being unsure of restrictions during delivery (eg, support partners, testing requirements, visitors).

"As I said, we women are not allowed to go with anybody in the hours prior. We endure the pain alone and isolated in a room. The nurses come, but they only come to check you, and then they leave. And you are alone. I think that's when you need a bit more support from someone there with you."

—EMBRACE, CPSP

Participants reflected on how COVID-19 compounded an already complicated mental health treatment landscape. Nearly every participant cited a substantial increase in stress, and most referenced depression and anxiety.

Financial and Food Insecurity: Safety precautions to prevent COVID-19 transmission compound the economic pressure on communities and individuals with few economic reserves to weather the pandemic.[19] There is increased pressure on safety net systems as families who previously did not rely on these services turn to food banks, childcare, unemployment, and financial relief programs. Loss of employment and childcare disproportionately affected people of colour, creating economic destabilisation and disrupting family patterns.[20] These issues also surfaced in our interviews.

"Just the whole COVID thing happening, it really just slowed things down as far as the process, the extensions, and seeing that so many people were applying for unemployment. . . . Dealing with unemployment just has been a bit of a hustle." —Non-EMBRACE

Many participants referenced the "full-time" commitment of staying afloat and accessing resources, leaving little time and energy for education or other endeavours. The dearth of childcare is impairing all areas of participants' lives, from attending in-person and virtual appointments to securing employment.

"Well yeah, it has because people that have jobs 9–5 can't get childcare because of COVID . . . I just think that it's just a lot harder when you're doing everything virtually compared to actually showing up and taking care of your business. . . . To me, it's very hard when you're trying to multitask and keep everything going and trying to do what you need to do to survive." —Non-EMBRACE

Work Insecurity: Participants who maintained employment cited concerns about workplace safety and lack of attention paid by their employers to COVID-19 risks. These risks were intensified for many participants, given that they were pregnant or caring for a newborn at home.

"I'm out of work because of the COVID-19 because I was on maternity leave, and when I went back to work, they didn't have the same position open for me, and they were trying to give me an unsanitary position. Basically, I'm like, 'I can't do that because of the COVID-19. I'm not trying to catch that thing.' It was like with bringing all the boxes in and stuff like that. They were like, 'If you can't do that, then basically you're fired.'" —Non-EMBRACE

The economic and social implications of COVID-19 for low-income families are complicated and devastating. Participants expressed the need for referrals and more personal introductions to services to help navigate overwhelmed social and economic support systems.

2) Potential Successes and Challenges of Virtual Sessions for Participants

Participants expressed readiness to explore a telehealth version of Glow/GC despite the challenges that associated with virtual sessions.

"You just got to bring yourself. Even I feel like it being a group session, I feel like that's the great thing about it being video and over the phone and being in a group session is you're engaging with a group of people who literally understand what you're going through. . . . In my case, what happened is I don't know too many people who are pregnant at the same time as me, or I know them, but I don't speak to

them. I think that's always helpful is having people that you can talk to." —Non-EMBRACE

Most participants have access to reliable internet, telephones, and/or computers and tablets to join telehealth sessions (Table 2). However, universal access is required, and program staff developed protocols to bridge the technology gap for all participants.

Table 2: EMBRACE enhancement qualitative study, California's Central Valley (2020) access to telehealth resources, pregnant/postpartum participants (n=62)

Question	Yes	No	Missing
Do you have access to a phone with reliable service?	59	1	2
Do you have access to the internet with a reliable connection?	55	5	2
Do you have access to a computer/tablet with internet access?	48	11	3
Do you have access to someone with technical skills if you need help?	41	16	5
Are you worried about the cost of phone or internet service?	17	38	7

Participants discussed many telehealth elements during the interviews, including concerns regarding populations who may be less likely to engage in virtual meetings. Participants emphasised that individuals who are prepared (with technology and other needs) for virtual health care will be more likely to attend, actively participate, and fully benefit from their enrolment in GPNC.

"I'm a hands-on learner. I would want someone to assist me hands-on first and maybe further appointments, I would do it on my own, but I would need that hands-on assistance at first."
—Non-EMBRACE, CPSP

Additionally, participant comfort with video conferencing varied based on their living situation, primarily around privacy for verbally discussing health concerns. Further, prior to the pandemic, in-person Glow/GC sessions were two hours long; however, two-hour virtual sessions may be too long to keep participants actively engaged, especially if children are present.

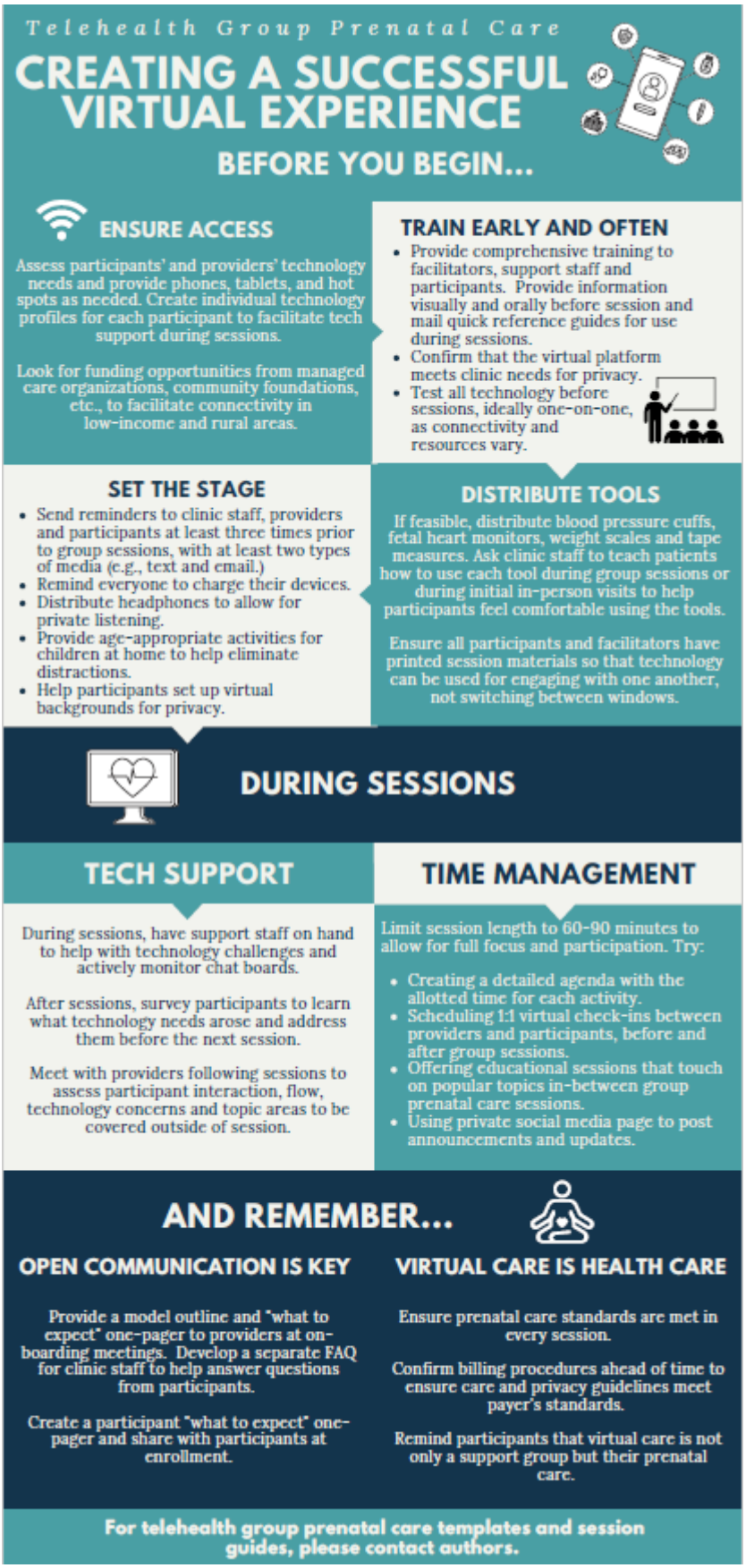
"I would need a good space for it [virtual group meeting], I would need a good phone and my Wi-Fi to be working and just a good setting, quiet." —EMBRACE, CPSP

Glow/GC Modifications

Critical to the model is the staff facilitators' effort to actively build community and meaningful social connection between the group members. Maternal wellness may also improve by increasing resilience through mindfulness and decreasing stigma through discussion and education, combined with direct referrals and warm handoffs to trusted mental health services. Further, facilitators can research COVID-19–related policies at local hospitals and provide updates to help address anxiety about the birthing experience. We summarise these themes and associated programmatic changes applied to the Glow/GC curriculum (Figure 1 and Figure 2).

Figure 1: COVID-19 modifications for telehealth group prenatal care

Figure 2: Designing and implementing successful virtual group prenatal care



DISCUSSION

We adapted an existing GPNC model, Glow/GC, for telehealth use by incorporating the perspectives of low-income Latinx, Black, and multi-racial/ethnic people who experienced pregnancy during the pandemic. The interviews highlighted a clear need for authentic social connections, mental health support, and access to resources to help address financial concerns. These themes can be generalised to prenatal care beyond the Glow/GC program to offer targeted support for families experiencing pregnancies while using telehealth to deliver GPNC.

COVID-19, and the need for physical distancing, compounded feelings of social isolation while decreasing experiences of social support. While increased use of telehealth[21] provides safety in terms of exposure, telehealth care does not address the psychosocial needs of pregnant and parenting persons. There are several ways to address this isolation when administering prenatal care following the pandemic. For example, prenatal care providers should work to include partners and other family members in telehealth visits as much as possible. Additionally, providers should try to build rapport with patients online individually, prior to meeting in a telehealth group setting. Once sessions begin, GPNC providers should encourage participants to build relationships within the group by using curricula that help explore and embrace cultural differences, and by encouraging participants to share personal experiences. Online communication can be coordinated on social media platforms between sessions to build relationships and highlight important topics, such as tips and tricks for using local resources.

Mental health concerns, historically under-addressed during pregnancy, became more pronounced for many individuals during the COVID-19 pandemic. The experiences shared in this qualitative study are consistent with findings that pregnant persons experienced increased symptoms of anxiety and depression when compared to previous cohorts.[22] Providers should develop strong connections with a variety of mental health resources to which patients can be referred around the clock should they experience a crisis or need support. Further, to reduce anxiety around delivery and hospital stays, we recommend early and frequent discussions regarding hospital policies and discussion of healthy coping mechanisms in prenatal care. Additional specific modifications that can be applied to all prenatal care delivery include administering a brief depression screening tool such as the Patient Health Questionnaire-2 (PHQ-2), or the Patient Health Questionnaire-9 (PHQ-9) if indicated by the PHQ-2[23], at each session; working with local behavioural health programs; using curricula designed to destigmatise mental illness; and exploring creative ways to practice mindfulness and self-care during group sessions.

Participants reported an increase in comfort with telehealth care delivery and cited few barriers to implementation. Barriers included privacy concerns and comfort with online platforms. Privacy can be enhanced by using chat functions to limit the need for participants to share verbally and supplying headphones. Studies across multiple fields of medicine provide evidence that telehealth care is acceptable and sometimes preferred.[24,25]Additionally, research on outcomes suggest that low-risk pregnant persons who participate in telehealth prenatal care for some of their care have good perinatal outcomes and perceived quality of care.[26] Many entities have created readily accessible and clearly written troubleshooting guides that can be adapted for use in telehealth group care settings and are available for use, free of charge.

CONCLUSION

The findings from this qualitative study represent important new information that clinicians and policymakers can use in designing and implementing telehealth GPNC for pregnant people who are low-income during and after the pandemic. In addition to reducing exposure to COVID-19 during the pandemic, there are also advantages to offering telehealth beyond the pandemic. Telehealth care limits the need for extensive paid time off to access health care, childcare accommodations, and need for public transportation. Further, many patients live in rural areas

and have difficulty attending regular appointments due to lack of access to consistent transportation. Addressing the concerns highlighted in this study may address barriers to seeking care and improve the mental health and wellness of pregnant and parenting persons.

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CONFLICTS OF INTEREST

The authors declare that they have no competing interests.

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