

Utilizing Culturally Tailored Approaches and Participant Feedback to Successfully Implement an Exercise Intervention in Black Women with Asthma: Are There Lessons That Can Be Applied to Address Disparities in Asthma Outcomes?



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Disparities in asthma outcomes disproportionately affect Black women in the United States, who experience higher rates of poor asthma control, health care use, and lower asthma-related quality of life.¹ Over the past decade, there has been a significant increase in the number of pharmacologic therapies for asthma; however, there has been less progress in developing formal recommendations regarding nonpharmacologic approaches. The Global Initiative for Asthma (GINA) strategy includes nonpharmacologic interventions as a tenant of the core management of asthma, with a focus on environmental allergen control, weight loss, tobacco cessation, and increased exercise as potentially beneficial for patients with asthma.²

Impaired exercise tolerance is common in asthma and is associated with a high prevalence of exercise-induced symptoms that result in decreased levels of physical activity.³ Engaging in regular physical activity has been shown to mitigate poor asthma outcomes. However, many individuals with asthma participate less often in physical activity compared with individuals without asthma.⁴ Pulmonary rehabilitation targets physical activity-induced impairments and is a well-established exercise and educational intervention for patients with chronic lung disease, with substantial evidence of benefit in patients with chronic obstructive pulmonary disease.^{5,6} Pulmonary rehabilitation interventions are effective in improving symptoms and exercise tolerance in patients with asthma.^{7,8} Nevertheless, there are many barriers to participation, including lack of insurance

coverage, the complexity of participating in a structured exercise program, and the time that is required.⁹ Interventions are desperately needed that target improvements in physical activity that are easier for clinicians to implement, given the challenges to implementing pulmonary rehabilitation in patients in asthma.

In the current issue of *The Journal of Allergy and Clinical Immunology: In Practice*, Nyenhuis et al¹⁰ aimed to assess the feasibility, acceptability, and effectiveness of a lifestyle physical activity intervention that was culturally tailored for Black women with uncontrolled asthma. The intervention, ACTION Lifestyle PA (ACTION), was adapted from the Women's Lifestyle Physical Activity Program.¹¹ The program was effective in improving participation in exercise among urban Black women with low physical activity levels, but those with chronic pulmonary disease were excluded from the study.

ACTION was a multifaceted, 24-week, evidence-based bundle consisting of education, group sessions, text messaging, the use of a Fitbit (Google, Inc, San Francisco, Calif) for monitoring, and a onetime 2-hour group session led by an asthma educator covering topics of interest, including asthma, physical activity, and Fitbit use. The comparator group received usual asthma care, one in-person education group session, a Fitbit for activity tracking, and recommendations to walk 10,000 steps/d. The primary focus of this study was to assess the feasibility and acceptability of this lifestyle intervention. The study population was composed of patients across the age spectrum, with lung function impairments, poor asthma control, and high health care use. Most participants had a low annual household income and were insured by public insurance programs. Overall, participants had a high level of adherence to all components of the program, and the withdrawal rate was low. Whereas there were no differences in asthma control scores between groups, the proportion of patients who achieved asthma control at the end of the study was much higher in the ACTION group; these patients also demonstrated higher quality of life scores. These results provide further supportive evidence that interventions that increase physical activity are beneficial in improving asthma outcomes. Data on longer-term effects, safety, feasibility, and acceptability are needed to understand whether this intervention has a long-term or only short-term impact.

The primary focus of the authors was on the safety, feasibility, and effectiveness of the intervention. However, the protocol also called for solicited feedback from participants through the completion of a survey regarding ways to improve the intervention. Survey results provided significant insights into

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participants' impressions regarding valuable enhancements to the program. Participants expressed a desire to have more interactions with each other. Organic ways to continue communication outside the formal program occurred, in which participants shared contact information and created a Fitbit group where they could continue to interact with each other. This inherent desire to connect with others and form peer mentoring groups cannot be underestimated and was not included in the initial study design. It is unclear whether this level of engagement would be desirable in all gender and racial groups. This highlights the importance of providing opportunities to tailor interventions in a culturally sensitive way. The impact of peer mentoring on the high retention rate in the study was not reported, but we postulate that this may have had a confounding effect.

This study emphasizes the importance of incorporating stakeholder feedback when designing interventions that aim to tailor evidence-based approaches to populations that have traditionally been understudied. The codesign of health-based interventions with stakeholder input is increasingly being implemented, but it has not been well-studied or described. A recent rapid review found evidence asserting that this approach can be effective.¹² Furthermore, culturally-tailored approaches to address health disparities among adults with asthma have been understudied, although there is early evidence to support the assertion that this approach results in improved outcomes.¹³ Because Black women with asthma already face significant health disparities, a tailored approach using codesign by stakeholders to adapt an evidence-based intervention is innovative.

We are currently experiencing significant advancements in digital technology in respiratory devices, including both digital inhalers and dosimeters, which can provide insights into medication use and inhalation parameters. The COVID-19 pandemic rapidly escalated the use of telemedicine, and many patients have embraced this shift in how care is provided. Thus, opportunities for participant engagement by remote monitoring and telehealth have emerged, making it more likely that exercise interventions such as ACTION could be offered more broadly to patients with asthma. Reimbursement for these programs will need to be addressed if we are to achieve high levels of implementation.

We are faced with a unique environment that allows us to begin to address long-standing disparities in asthma outcomes by

eliminating barriers to more novel approaches to asthma care and research. The scientific community should begin to focus on ways to leverage participant perceptions and feedback to reduce clinical trial burden, improve study design and interventions, and ultimately enhance the recruitment and retention of diverse populations, making studies more robust and generalizable. This would be an essential first step in turning the corner on decades-long concerns about disparities. In the end, we can learn only by asking those for whom we care about their true expectations, desires, and needs.

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