There is a lack of published literature regarding the sociodemographic characteristics of pediatric patients that use asthma self-management tools, such as mobile applications.

This study evaluates the impact of ASTHMAXcel Adventures on distinct pediatric subgroups.

ASTHMAXcel Adventures is a mobile app with games and videos that educate patients and promote self-management.

At baseline, 4 months, and 6 months, we administered the app and evaluated the following outcomes: Asthma Control Test (ACT), Pediatric Asthma Impact Scale (PAIS), and healthcare utilization (ER visits, hospitalizations, steroid use).

The paired 2-sample t-test evaluated change from baseline, and was performed for all outcomes and subgroups.

• 39 patients (male=20) were enrolled. In the 7-11yo age group, there were statistically significant improvements in ACT at 4 and 6mo (17.2 vs 19.4, p=0.02; 17.2 vs 20.3, p=0.001), PAIS at 4 and 6mo (46.4 vs 36.2, p=0.005; 46.4 vs 31.0, p=0.0002), and reduced prednisone use at 6mo (0.5 vs 0, p=0.03).

• Patients 12-14yo had significant improvements in ACT at 4mo (16.0 vs 21.8, p=0.005).

• Male patients had significant increases in ACT at 4 and 6mo (15.7 vs 20.1, p=0.001; 15.7 vs 20.9, p=0.0001) and reduced prednisone use at 6mo (0.5 vs 0, p=0.02).

• Black patients had significant improvements in ACT at 4 and 6mo (16.1 vs 20.6, p=0.003; 16.1 vs 19.6, p=0.03), and PAIS at 4 and 6mo (47.1 vs 33.4, p=0.001; 47.1 vs 28.4, p=0.0001).

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The ASTHMAXcel Adventures Mobile Application for Pediatric Patients: A Subgroup Analysis

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Results

• ASTHMAXcel has been associated with improved outcomes in young patients, male patients, and Black patients. Larger studies are needed to validate these results.