

THE EFFECTS OF A MHEALTH INTERVENTION ON ASTHMA SYMPTOM CONTROL IN INNER-CITY TEENS

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Journal MTM 1:4S:27

DOI: 10.7309/jmtm.49

www.journalmtm.com

ABSTRACT

Smartphone based technology has emerged as a promising tool for facilitating behavioral change and promoting healthy choices. CHES, an extensively investigated eHealth system designed to provide information, support, and decision making tools for individuals was adapted for smartphones and tailored for use by teens with a current diagnosis of asthma. The M-CHES (Mobile asthma Comprehensive Health Enhancement Support System) application provided periodic asthma education, case management, an asthma action plan, and access to peers with the primary goal of helping the participants learn to better control their asthma symptoms.

218 inner-city adolescent Medicaid recipients were enrolled into the study. Participants were randomized to either a control group (n = 87) which received a smartphone and access to an asthma education website or to an intervention group (n = 131) that received a smartphone preinstalled with M-CHES. Surveys – including the Asthma Control Test (ACT), a measure of how well an individual's asthma symptoms are being managed – were administered throughout the intervention period to both the control and M-CHES teens via the smartphones.

Initial analysis shows a significant effect of M-CHES on the change in ACT scores across the first 60 days on study (p=.011). On average, the M-CHES group showed a 2% improvement in ACT score per day of study over the control group. There was no significant difference between groups on the change in ACT score from month 2 to month 4. These results indicate that M-CHES may be an effective intervention for teens who have trouble controlling their asthma symptoms. Ongoing analysis will examine whether the drop-off in improvement of symptom control is related to a decline in use of the M-CHES application and attempt to identify specific subgroups for which M-CHES may provide the greatest benefit in asthma symptom control.