

## RESULTS

### Participants

90 parents of youth with asthma between 7 and 13 years of age were contacted to participate in the study. Of these, 18 could not be reached by phone, 9 expressed interest but were unable to be scheduled, 12 verbally agreed to participate but did not show up to the appointment, and 19 declined participation in the study. This resulted in a sample of 32 youth (21 males and 11 females) and their parents (1 father, 31 mothers). See Tables 1 and 2 for further details of youth and parent characteristics.

### User Evaluation and Preference

Overall, youth in the study provided a positive evaluation of “Catch Your Breath,” with the majority of the sample endorsing that they liked the microgame (81.3%), found it mostly or very easy to play (78.1%) and mostly or very interesting (84.4%), and liked the way it looked (68.8%). Regarding utility, nearly all of the youth in the study perceived the microgame as mostly or very helpful in facilitating a better understanding of managing their asthma (90.6%, N=29), and the majority found the information mostly or very easy to understand (75.0%) and perceived the amount of information to be “just right” (87.5%). Similarly, the majority of youth were mostly or very satisfied with the microgame overall (75.0%), and 71.9% endorsed that they would return to the game should they have any problems with their asthma management in the future. The majority of youth also indicated that they preferred the microgame over the standard educational brochure (83.9% and 16.1% respectively). See Tables 3-5 for an overview of user evaluation and preference results, including technical difficulties.

### Knowledge, Attitudes, and Satisfaction Towards Asthma Self-Management

No statistically significant differences were found from the pre-post comparison on measures of knowledge, asthma self-management beliefs, or asthma-related anxiety (as measured by the FAQ-C). However, there appears to be a trend ( $p=.102$ ) indicating an increase in knowledge for those who used the microgame first over those who read the brochure first. Of note, a power analysis for the knowledge outcome was conducted, which indicated that in order to have 80% power to reach significance (at  $p=.05$ ), a study of the same design as the present would require a total sample of 92 participants (46 in each group). See Table 6 for more detailed pre-post comparison results.

### Asthma-Related Anxiety

There was a promising positive correlation, though not statistically significant, between youth’s anxiety (as measured by the YAAS) and their improvement (greater amount of change from pre to post assessment) on the ASMB and on the FAQ-C. For parents, there was a promising negative correlation, though not statistically significant, between parental anxiety and youth’s improvement on the ASMB. See statistical output in the Appendix for more details on these.