

Introduction

- The Detroit Young Adult Asthma Project (DYAAP) is a multi-component technology-based intervention for African American Emerging Adults (AAEA) with Asthma in an urban setting that are prescribed asthma controller medications.
- People with asthma controller medication prescriptions are instructed to take those medications everyday regardless of asthma symptoms.
- DYAAP participants are asked to self-report controller medication adherence in multiple formats.
- The use of self-report measures poses obstacles for data reliability and validity:
 - Data obtained from subjective self-report measures may pose issues due to social-desirability and recall bias.
 - Objective measures may present issues with feasibility and missing data.
- The use of subjective self-report measures and objective measures, may increase data reliability and validity when used concurrently to collect data around the same defined variable, medication adherence.

Study Objective

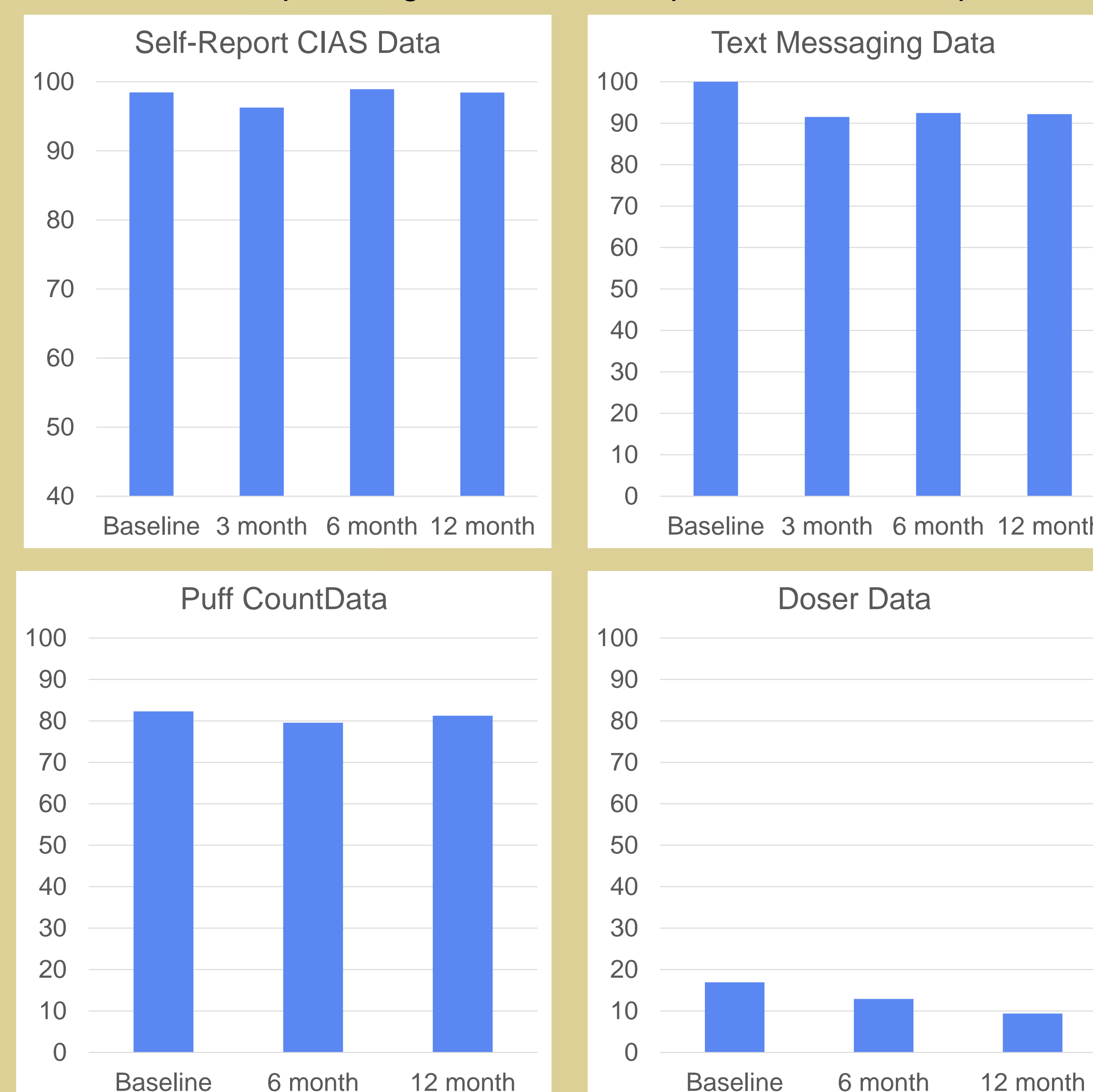
- One main research goal is to increase medication adherence from baseline to 12-month.
- The objective of this presentation is to analyze and describe the different measures used to collect medication adherence.

METHODS

- The study measures controller medication adherence at Baseline, one-month, three months, six months, nine months, and twelve months.
 - The project utilizes both subjective & objective self-report measures as described below.
- Subjective Self-Report Measures**
- **Daily text messages**-participants-respond to daily text messages tracking medication adherence, utilized at baseline, three months, six months, and twelve months.
 - **Computer-assisted interview**-participants-report their medication adherence over the past four weeks, given at baseline, one-month, three months, six months, and twelve months.
- Objective Measures**
- **Doser**-a tracking device which measures doses of medication administered over a seven-day period, attached to a participant's inhaler at baseline, six months, and twelve months.
 - **Puff count**-the number of inhalations on a participant's inhaler at the beginning and end of a seven-day period, recorded at baseline, six months, and twelve months.

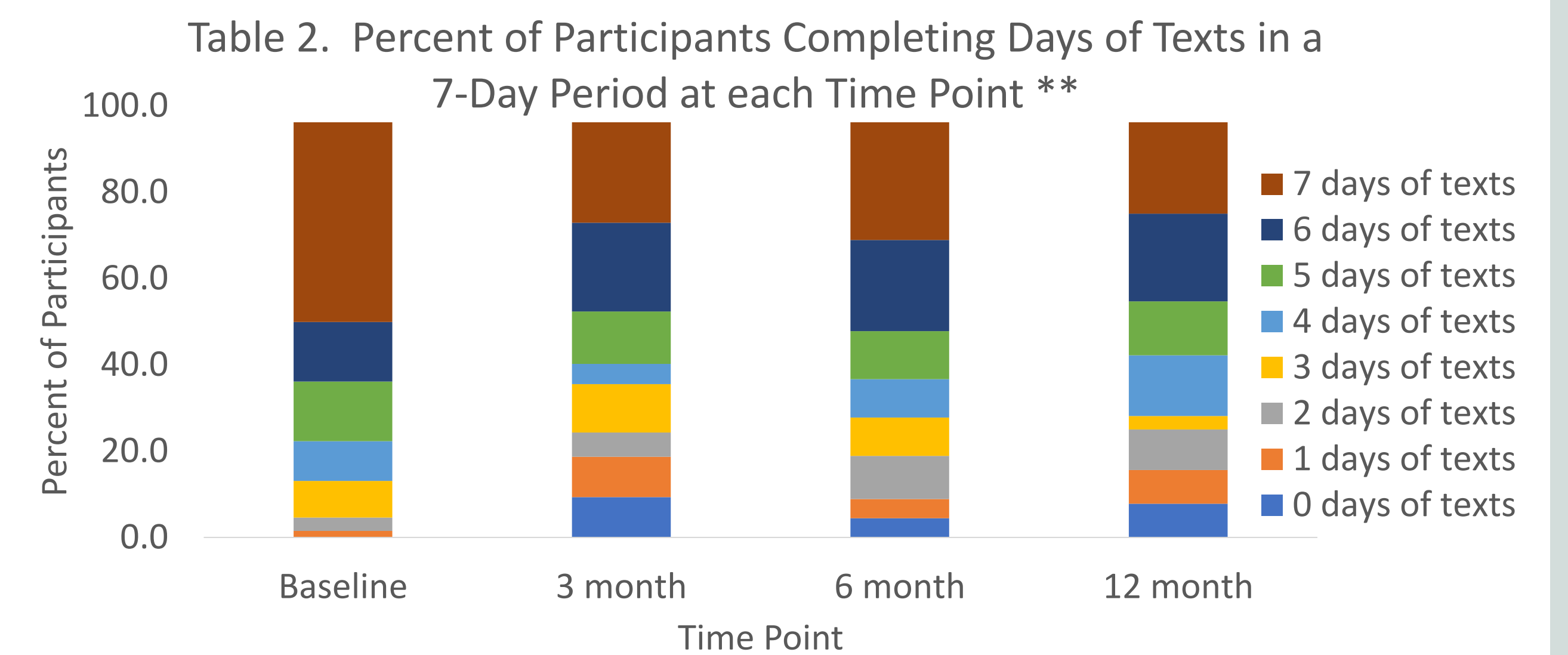
RESULTS

Table 1. Completion rates for measures of adherence at each follow up among those who completed the follow up*



*Results are among those that completed data collection at the given time point.

RESULTS



**While participants may respond to at least one day of text messages at a given time point, they don't necessarily answer all 7 days of texts.

- To date, 130 participants have completed baseline.
- All responded to one or more text messages at baseline and of those that completed six months, 92.5% (n=86) responded to at least one text.
- At baseline, only 24.6% (n=32) had medications that were compatible with the Doser and only 17.7% (n=23) had valid data, and at six months, only 12.9% (n=12) had valid data.
- At baseline 82.3% (n=107) completed the puff count data and 79.6% (n=74) at the 6-month data collection.
- Self-report measures from the computer-assisted interview had the greatest response rate. At baseline a minimum of 98.35% (n=128) had a valid response and 98.9% (n=92) at six months.

CONCLUSION

- Self-report measures are difficult for many reasons.
- There are issues with the level of missingness for objective measures (Doser & puff count) of adherence compared to subjective measures (computer-assisted interview & text messages), which have lower levels of missingness, but may be affected by social-desirability and recall bias.

PUBLIC HEALTH IMPLICATIONS

- Self-report measures are used widely throughout public health research.
- Using both objective measures, such as puff count, in addition to subjective self-report measures would provide greater response success and potentially reduce costs for asthma related research compared to other measures, such as the text messaging.