Smartphone technology opens up entirely new possibilities for health-related data collection. Apps have been used to collect physical activity data [1] and behavioral health data [2]. Smart phones have been used for survey data collection, including in international contexts [3]. Apps can also be used to engage users in health-promoting behaviors, including nutrition and physical activity in adolescents [4], smoking cessation and sexual health in an indigenous population [5] and positive parenting behaviors [6]. The utilization of apps for health promotion may depend not only on the characteristics of an app itself, but may interact with user characteristics [7].

How to evaluate the quality and utilization of a mobile application is an open question. The Mobile App Rating Scale (MARS) has been developed for evaluating overall quality of health-promoting apps [8]. In the field of psychiatry, ASPECTS (Actionable, Secure, Professional, Evidence-based, Customizable, and TranSparent) has been proposed to assist clinicians in evaluating the appropriateness of an app for a client’s use [9]. Surveys have been used to measure health app use, but these rely on user self-report [10, 11].

Considering how to design a health-promoting app that collects its own utilization data, we move beyond the academic literature to discussions in a business context. Useful utilization metrics may include: average number of unique app users per day or month, session use length (from open of app to close), time in app per day, number of usage sessions per day, screen-flow, capturing a user’s “path” through the screens of the app and percentage of users who return after first use of the app [12, 13].

The current proposal is to develop an application that will promote father-child bonding through storytelling experiences. The target population is Latinx fathers of children ages 0 - 3 years, residing in a mobile-home community in a mid-sized, western US city. The app will allow fathers to communicate with their children via stories while they are away at work. It will also suggest father-child, story-based activities for times when they are together. Finally, the app will include “did you know” parenting tips and will prompt the user to complete basic developmental and parent health screens.

A goal is to include metrics in the app that monitor utilization and to use such data to inform changes to future versions of the app. Building on the general list above, for the father-child app these metrics may include: number of father-use sessions per day, number of unique father-users, number of “stories” or
“audio-slides” created by fathers for children (per day or month), number of suggested activities “followed” and number of parent tips “clicked.” The app may be connected between the father’s phone and the phone of the child’s daily caregiver (e.g. mother or grandmother). If so, similar metrics would be collected from the daily caregiver’s phone as well.

A second goal will be to use the app as a screening tool for serious child developmental issues or parent mental health issues. The father may be “pinged” to complete a basic mental health screen. He may be asked every 6 months about basic child development (is your child: eating, standing, walking, crawling, using the toilet, talking?). These prompts would be could be customized based on the child’s birthdate.

References