

AN ENGAGEMENT INDEX:

The development and application of an engagement index on the participants use of an infant feeding app: The Growing healthy program

Sarah Taki¹, Sharyn Lymer², Kok-Leong³, Karen Campbell², Georgina Russell¹, Rachel Laws² Elizabeth Denney-Wilson¹

University of Technology Sydney¹; Sydney University²; Deakin University³

BACKGROUND

- Mobile health (mHealth) interventions have great potential to promote health
- Very little research has been conducted to understand how participants interact with health apps and with which parts of apps participants engage with.

WHAT ARE OUR GOALS?

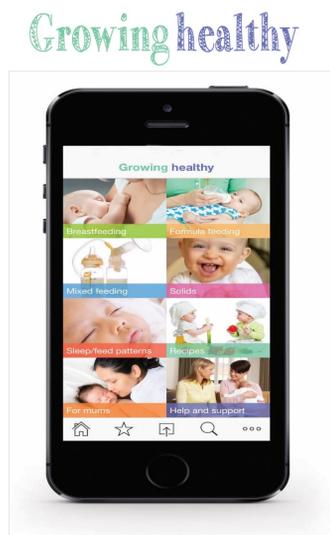
Develop and apply an index to objectively measure how and when participants engage with the Growing healthy mHealth program.

HOW DO WE DO THIS?

1. Identify program measures

Analytics data:

- The Growing healthy app provided infant feeding information up to 9 months
- Mothers were able to join if they had a baby 3 months or less
- Users received 3 push notifications per week tailored to their baby's age and current feeding method



Surveys:

- Participants were requested to completed 3 surveys baseline, 6 month and 9 month of the baby's age
- The surveys collected information about the mothers feeding practices and satisfaction with the app

2. Explore the analytics to identify metrics

The analytics collected from the Growing healthy app included:

- Number of days the participant accessed the app
- Pages visited
- Push notifications sent and opened

3. Application of the Engagement Index

- The Engagement Index (EI) tool developed by Web analytics Demystified (Peterson & Carrabis, 2008) was adapted and used to measure how participants engaged with the Growing healthy app
- The engagement Index tool comprises five-sub indices designed to capture a range of participant behaviours

Metric	Definition	Formula
Click depth index (CI)	Number of pages a participant viewed per session (1 day) in the app	$\frac{\text{Session having "at least 2 pages viewed"}}{\text{All sessions}}$
Recency Index (RI)	The time difference between each session the participant accessed the app	$\frac{1}{\text{Number of days elapsed since the most recent session}}$
Loyalty Index (Li)	Measures the frequency of the mother access to the app from when she commenced the program until the baby's age at 9 months	$1 - \left(\frac{1}{\text{Number of sessions accessed during the timeframe of the program}} \right)$
Feedback Index (Fi)	Subjective measure of the participants' satisfaction with the app assessed in the programs 9 month survey (questions included: ease of navigation, readability, quality and usefulness of the content on the app)	$\frac{\text{Number of positive responses}}{\text{All quantitative questions asked about their satisfaction with the Growing healthy app}}$
Interaction Index (Ii)	Number of push notifications opened from those sent throughout the program	$\frac{\text{Number of push notifications opened}}{\text{Total number of push notifications sent}}$

Table 1. The Engagement Index and metrics for the Growing healthy program

WHAT DOES THE ENGAGEMENT INDEX PROVIDE?

- MHealth interventions delivered by apps provide the opportunity to investigate participants' engagement with the intervention and its constituent parts. The use of an Engagement Index may help researchers to understand how participants engage with such an intervention, the trends in engagement over the course of the program, and whether the levels of engagement affect intervention outcomes.

Acknowledgments

The research reported in this poster is a project of the Australian Primary Health Care Research Institute, which is supported by a grant from the Australian Government Department of Health and Ageing. The information and opinions contained in it do not necessarily reflect the views or policy of the Australian Primary Health Care Research Institute or the Australian Government Department of Health and Ageing.

Contact: sarah.b.taki@student.uts.edu.au