



Digital Engagement: It's a process,
not just an outcome

Findings from Testing the SKATA mobile app
for family planning in Indonesia

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“Engagement” in digital health

- Meager peer-reviewed literature on digital health & behavior change, inconsistent effects^{1,2}
- “Engagement”
 - Derived from ‘patient engagement’³
 - Participants control communication experience
 - Sustained interaction with intervention over time⁴
 - Influenced by motivation for use⁵





Gaps in digital health engagement literature

- Lack robust evaluations of “engagement” in digital health
 - Reliance on usage metrics
 - Engagement often treated as a static outcome measure^{6,7}
 - Assumes steady salience over iterative process
 - Often lack assessment of skills practice⁸
- Limited understanding of *how* digital engagement plays a role in contraceptive decisions, particularly in Indonesia



Research Aims

- Explore the **engagement experiences** of women who use a digital behavior change intervention (DBCI) about family & contraception
 - Understand how **motivations** for engaging with the DBCI relate to use
 - How do users describe the **cognitive changes** that occur during engagement, and role of **interpersonal communication** in practicing new skills related to family & contraception



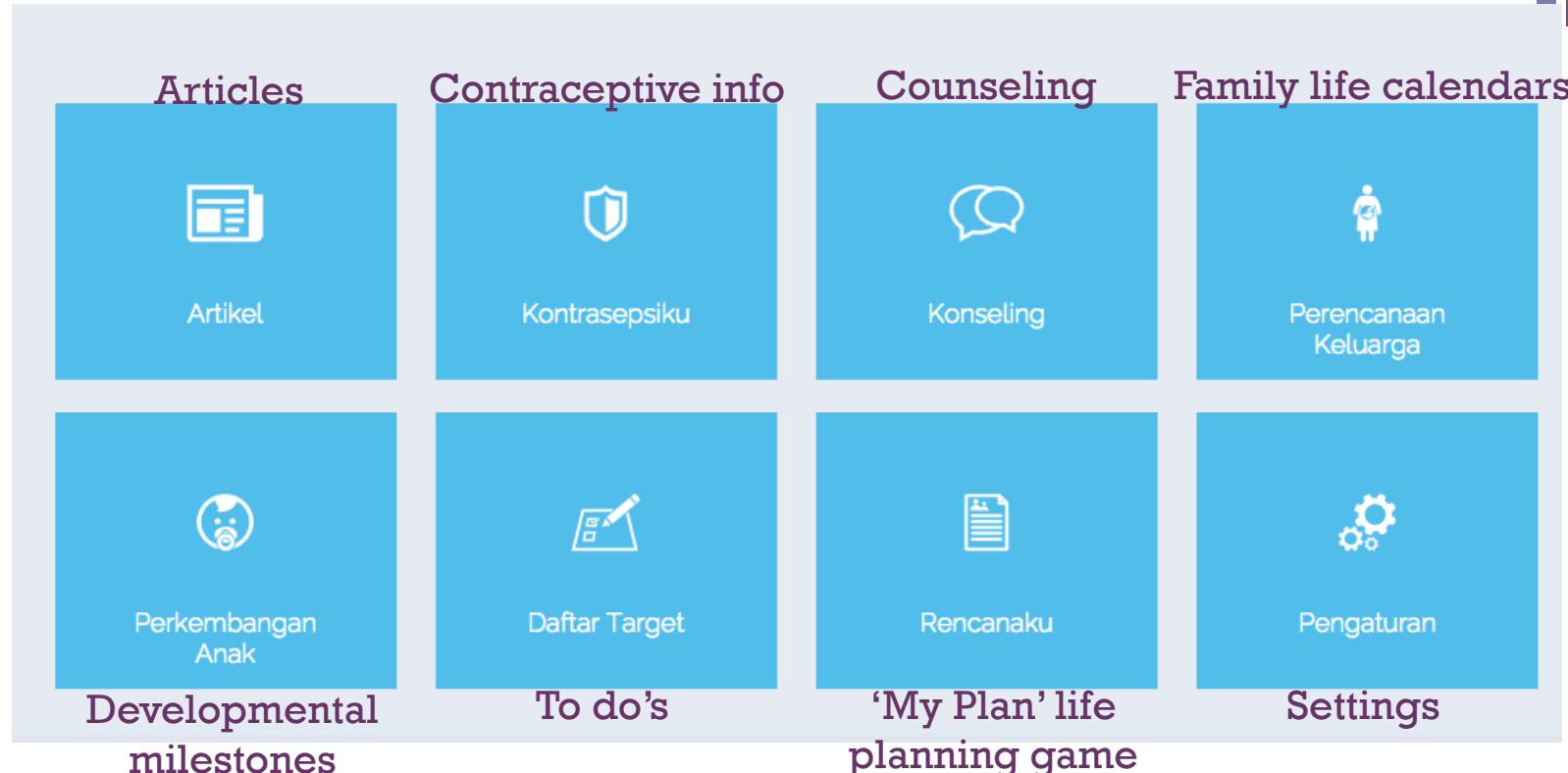
Theoretical underpinnings

- “Phases” of engagement with technology⁶:
 - Point of engagement
 - Period of engagement
 - Disengagement
 - Re-engagement
- Uses & Gratifications: motivations driving use of media⁷
 - Gathering general knowledge on topic
 - Finding diversions
 - Gaining personal insight
 - Gathering specific knowledge for decision-support
 - Correlational information

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graph LR; A[Scanning function] --- B[Gathering general knowledge on topic]; A --- C[Finding diversions]; A --- D[Gaining personal insight]; E[Seeking function] --- F[Gathering specific knowledge for decision-support]; E --- G[Correlational information]
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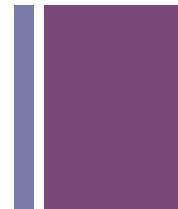


Research context: SKATA app





SKATA Planning & Counseling



Kalender Imunisasi

Kalender Sekolah

Perencanaan Pendidikan

Tanya Bidan Skata

Cari Bidan Terdekat

Proyeksi Rencana

The timeline diagram shows four stages: 1. Radha (represented by a photo of two women), 2. Suami Menikah dengan Radha pada tahun 2019 (represented by a yellow circle with a woman icon), 3. Anak ke-1 lahir tahun 2020 (represented by an orange circle with a baby icon), and 4. Anak ke-2 lahir tahun 2023 (represented by another orange circle with a baby icon).

⚠ PERINGATAN ⚠

Kehamilan di usia 35 tahun ke atas merupakan kehamilan dengan resiko tinggi kepada kesehatan ibu dan bayi

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Pada tahun 2044 kalian akan memperingati pernikahan perak



Methods: Structured interviews

Usability interview

34 participants
Jan 10 – Feb 20, 2016
~1 hour

- 1 month -

Follow-up engagement interview

31 participants
Feb 4 – Mar 13, 2016
~45 minutes





Participant recruitment & Data collection

- Engaged/married women
 - 3 life stages: newlywed, spacing, limiting
 - Contraceptive users & non-users
 - Have 2+ apps on mobile phone
- Hired local recruiters identify participants
- 3 dropouts in follow-up engagement interviews
- Local researcher conducted & recorded interviews
 - Primary researcher attended all interviews
 - Interviews transcribed & translated



Data analysis

- Initial reading: identified motivations for use at each interview
 - Segmented by state of motivation after one month
- Framework analysis based on app features & gratifications
 - Compared overlap of features & gratifications obtained
- Coded sharing of app through interpersonal interaction
 - Compared sharing experiences by motivation to use app



Initial motivation to use Skata, by life stage

Lifestage	Scanning	Seeking		No motivation
		Planning future	FP decision	
Newlywed	4	6	--	--
Spacer	8	1	1	2
Limiter	8	--	3	1



Motivations & Skata use: Scanning

- Scanning to gather information, self-monitor
- Use mostly articles, child development information, menstrual calendar

“Yes, I have [used Skata in the past month], but just the articles. A lot of people made comments there [so] it’s interesting...[I use Skata because] for me there is a need...so that I won’t be left behind. I can keep up with information, so in a conversation with friends the topics will click.” – Brebes, Newlywed, Scan

“[I’m interested] particularly in planning for education [of my children... I read the information for my first child. I searched for what a 4-year-old can do. The child can say his complete name, and can write in capital letters. So that means I have to start teaching my child how to write capital letters.” – East Jakarta, Limit, Scan



Motivations & Skata use: Seeking

■ Seeking information to plan for the future

“I’ve tried [My Plan] several times. I tried the scenario with 2 children, then with 3 children in a certain year, etc. Well I’m simulating the planning. This year, that year, what if I add this, what if I have another child, those things.” – Brebes, Space, Seek

■ Seeking information to make a contraceptive decision

“Quite a lot of people use implant actually and initially I found out from people, then I read in Skata and it became clearer...in ‘My Contraception,’ there is information on implants...It’s here, the advantages are it’s easy to stop using this method and it doesn’t leave a mark. The insertion is easy.” – Asahan, Space, Seek



Process of engagement for scanning and seeking

- Scanning generally
 - Sharing
 - Reflection prompts seeking
- Planning for future
 - Make plan, share plan with partner
 - *Share tips to prepare, scan to develop plan in further detail*
 - Plan ahead: future contraceptive decision
- Making a contraceptive decision
 - Expand options, narrow selection
 - Seek experiential information
 - Discuss with partner, provider
 - Prepare appointment, permissions, expense
 - Adopt method
 - *Share experience - add to scan-able content*





State of motivation after one month

Skata use, by initial motivation

Initial motiv.	Same motiv.	Change in motivation		
		Start planning future	Start considering contraception	Stop seeking
Scan	14	2	4	--
Seek	6	--	1	2
No motiv.	1	1	--	--



Scanning → sharing

- Almost half of women who used Skata to scan started sharing information with others → enhance social role

“I’ve even uploaded stuff to Facebook – an article - the one about early marriage and the one with a picture of a father and young child [about father-son relationships]. [I shared it] so that my friends know how important it is for a father to be close to his children...Three or four people, they gave a ‘like.’ I wanted a lot of comments so that I could provide a response and continue further.”
– Brebes, Space, Scan

“I have a few friends and I told them to install Skata. There were three office colleagues. We chatted [about the quiz]. The quiz is fun – it can be made into something humorous. For example, some of us answer based on our experience, and then sometimes our answer is wrong. So we all laugh together.” – Brebes, Limit, Scan



Scanning → seeking

- Sharing and self-reflection prompts seeking

"It's better to [share Skata] in a large group. So when people throw in a comment we can respond directly. It's just like being in a debate. Then we can have a debate; it's exciting....Only yesterday when somebody just had a baby, we talked about Skata again...the first discussion [with friends] was because 'hey look here's a new thing.' Afterwards things quieted down, but then someone was pregnant and gave birth, so the discussion went back to the first topic... as of this January I haven't got my period, and I'm concerned I may be pregnant. So if I am pregnant, I certainly won't use any contraception. Perhaps in the future, after I give birth, if my husband says I should use contraception, then I will use it." – East Jakarta, Limit, Scan turned Seek



Seeking to plan → Potential to harness IPC

- Contemplating details of future plan – repercussions of plan, all aspects to plan for regarding child rearing; Discussion with partner

“It’s more complete, so we know how to prepare everything. Those [milestones in couple’s life and child’s life] have not entered our mind so far. I’ll share this with my husband later.” - East Jakarta, Newlywed, Seek

- Once plan is made, engagement not over, but user lost

“[My Plan] is basically a simulation tool. Regarding planning we indeed have made plans ... we have planned the budget in more detail ... It’ll be interesting [to have more detail about expenses in the app], since sometimes people need an illustration about how high the expense will be, so that they can start preparing from now on, and it can be a consideration for both the husband and wife. My husband is someone who loves to plan, and he’s been doing the calculation...[he] saves his plan in a file. When he wants to make a plan, he usually will do a presentation and I’m supposed to listen to him..hahaha.” - Brebes, Newlywed, Seek to None



Seeking for FP decision → Stop-gap to provide IPC

- Gathering experiential information & preparation through IPC outside of app

“[At follow-up] I’m using [an implant]...**Before I read Skata I asked a friend**, ‘does this method have any side effects? There must be something about the method that scares people.’...After I read Skata, ‘Oh it turns out it’s like this.’ The insertion procedure, the effects. Yes, [Skata] encouraged me...**For me it’s not enough. I had to ask around**...I could see the insertion procedure in-person. The device also...I truly witnessed it, you know? So it was truly like this – I saw the midwife insert it...**I asked around about how people feel when the device is inserted**, do they feel comfortable? I **asked friends who have used that method**, particularly those who have used it three times...[I talked to] my friends from the *arisan* [women’s savings group] [about implants] and a lot of them already use the method. ‘Yes, it’s quite comfortable indeed,’ they said that. So I became interested as well...**My husband is also supportive** – praise God.” – Brebes, Limit, Seek



Seeking for FP → Potential to harness advocates

- Those who change offer opportunity to share experience

"I kind of promoted this [implant] too...The cadre also asked me to help introduce the device; I was the model...[the audience] asked, 'were you afraid when it was inserted?' [I said] 'Yes there was fear.' [They asked] 'are you confident and firm [in your decision] about this method? Who knows, maybe midway you'll ask to have it removed.' [I said] 'Yes, I am firm with my decision...meaning I will continue this method for three years.' ...[Would you be willing to share your testimony on social media?] Go ahead, I may be able to do it. It's also sharing of experience." – Brebes, Limit, Seek



Implications for measuring and promoting engagement

- Identify motivations to facilitate relevant cognitive shifts
- Harness the power of interpersonal communication to facilitate change
- Scanning:
 - Gamification and participation in formal social groups lend themselves to sharing
 - Sharing reinvigorates scanning, sustains engagement, may prompt seeking
- Seeking:
 - Expand on ability to compare with others, discuss with partner so that users do not disengage while seeking
 - Expand ability to share with others so users can contribute their experiences and successes, shift back to scanning

+ Terima kasih! Thanks!





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