



**Joining the Mobile Revolution:
An Interactive Mobile App that Provides
DBT Skills Coaching
for Individuals with BPD and SUD**

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What began just 2,000 days ago has become
an **Unstoppable Mobile
Revolution** in how we live.

- We **love our phones!**
- They are **always** with us
- They are **like magic wands**

BJ Fogg, Ph.D., Stanford University
Mobile Persuasion



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Mobile Technology

- Currently over 300 million mobile phone users in US, ½ with “smart phones”
- Most people carry their phones with them at all times
- Estimated 57.6 million apps downloaded per day across platforms
- By 2014, over 185 billion apps will be downloaded



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We wondered ...

Twitter



Could a mobile app be helpful to people with BPD in providing as-needed coaching in DBT skills?



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Borderline Personality Disorder

- 5.9% of gen population & 15% of outpts meet BPD criteria; high utilizers of psychiatric services (up to 40%).
- Myriad of behavioral problems, including labile affect, unstable relationships, and impulsivity, including SUD.
- Multi-diagnostic group; lifetime risk of suicide is 10%; 69% - 80% engage in self-harm.



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The background features a light blue gradient with a winding yellow path. Scattered along the path are several black mobile phones, blue Twitter bird icons, and the word "Twitter" in a blue, stylized font. There are also some green and yellow striped circular patterns and small dark blue leaf-like shapes.

**Dialectical Behavior Therapy
(DBT) is an empirically
supported, multi-modal
therapy for BPD**



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DBT's Functions and Modes of Tx

1. Improve capabilities
2. Improve motivation
3. **Generalization to natural environment**
4. Structure environment to reinforce new behaviors
5. Increase therapist skills and motivation

1. Skills training groups
2. Individual Therapy
3. **Phone coaching**
4. Work with families, administrators, others in environment
5. DBT Team Consultation



DBT Coach1.0

- **Therapy Adjunct** for DBT clients receiving comprehensive DBT.
- **Primary Aim:** Aid consumers in identifying and correctly using DBT skills *in vivo*.
- **Secondary Aims:**
 - Enhance motivation to use skills
 - Increase use of DBT skills
 - Teach and strengthen DBT skills.



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Research Aims

- Develop mobile app as adjunct to DBT to facilitate use of skills, starting with one specific skill
- Test feasibility with target end-users (BPD-SUD clients in DBT)
- Gather preliminary outcomes on satisfaction, usability, and effectiveness in small pilot trial



Approach to Product Development

- Iterative process of development with feedback from target audience & expert advisory board.

Development Team

- DBT Content Experts
- Treatment developer
- Instructional designer

Advisory Board

- DBT experts, trainers

Targeted End User

Individuals with BPD-SUD



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Prototype

- “DBT Coach”
- Installed on Nokia Series 60 platform smart phone (other features disabled)
- Opposite Action Skill
- Other features:
 - Follow-up DBT Coach
 - Daily Assessment

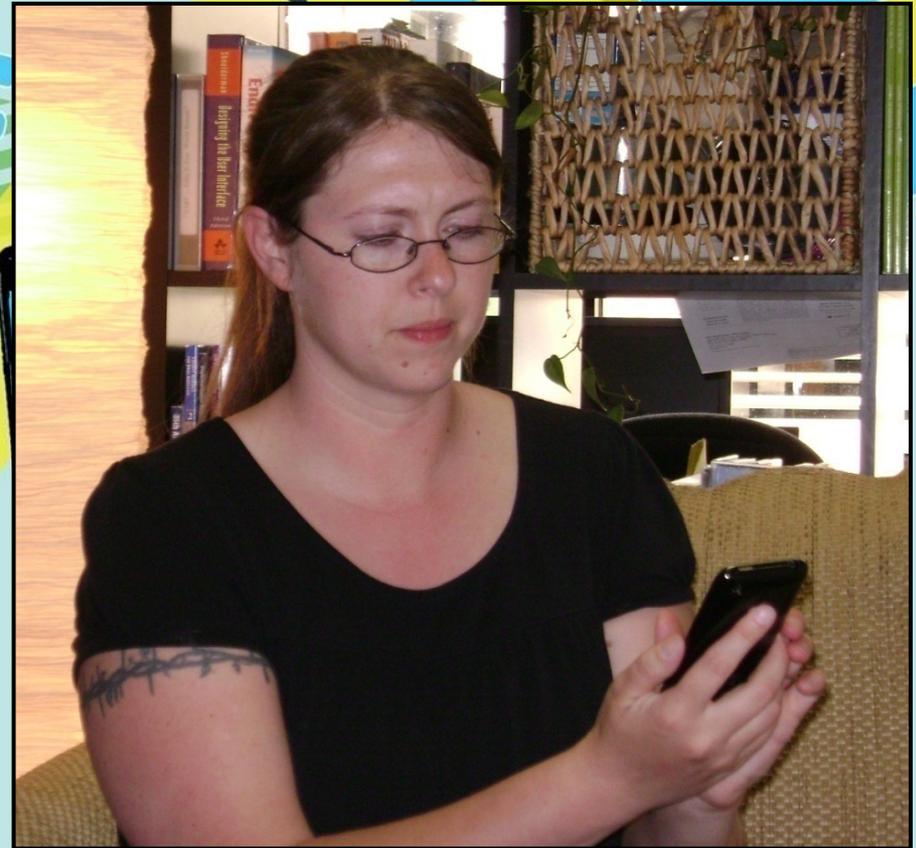


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Use Skills not Pills Mandy!

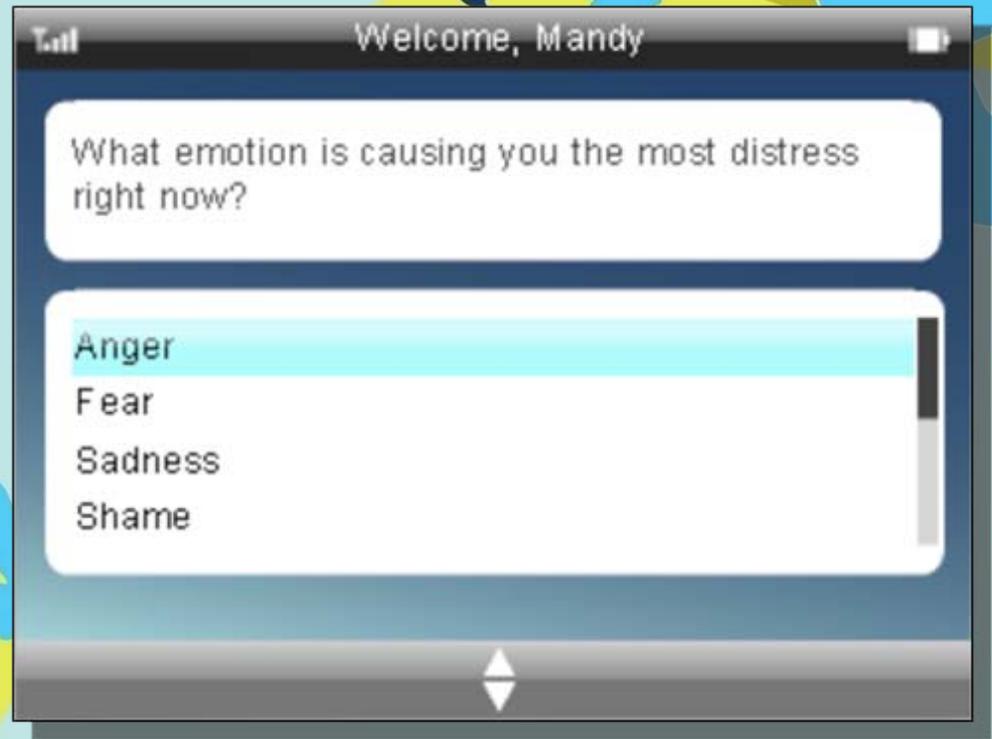
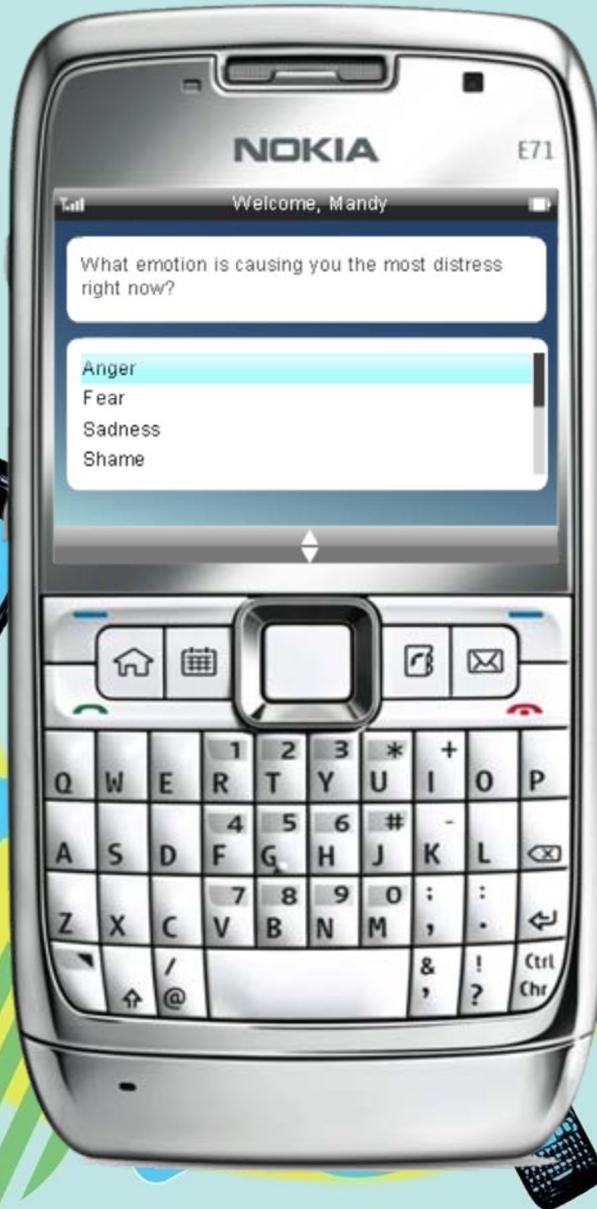
An alternative solution...



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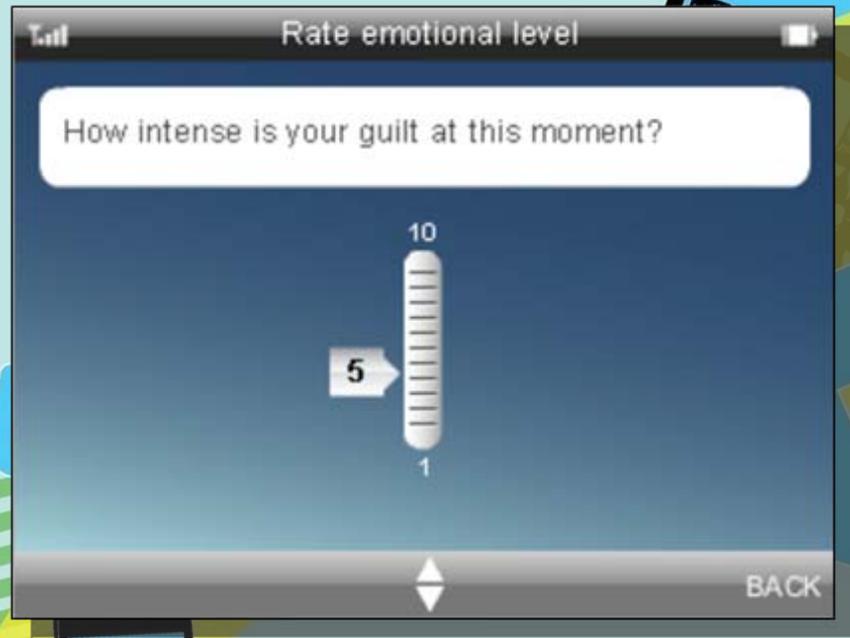
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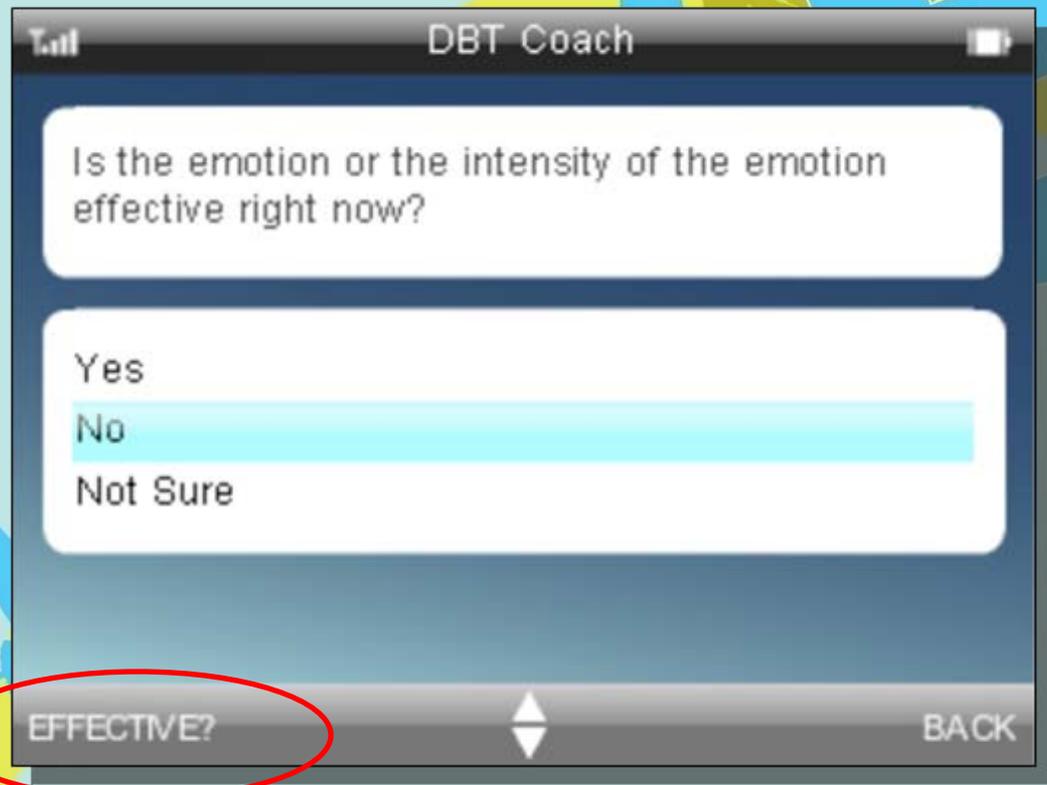
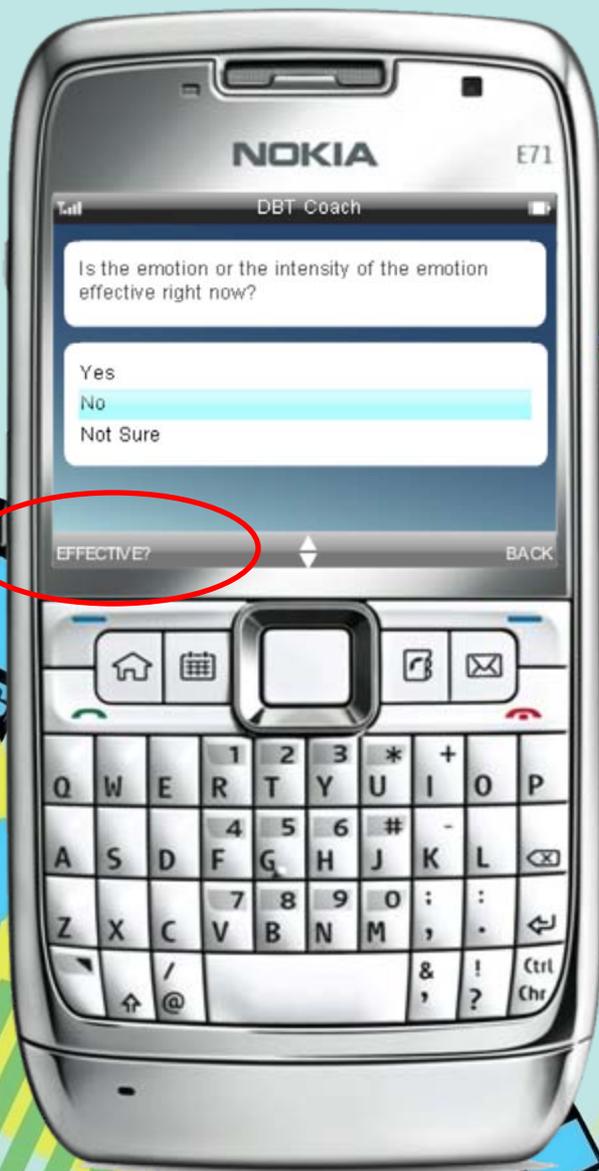
DBT Coach



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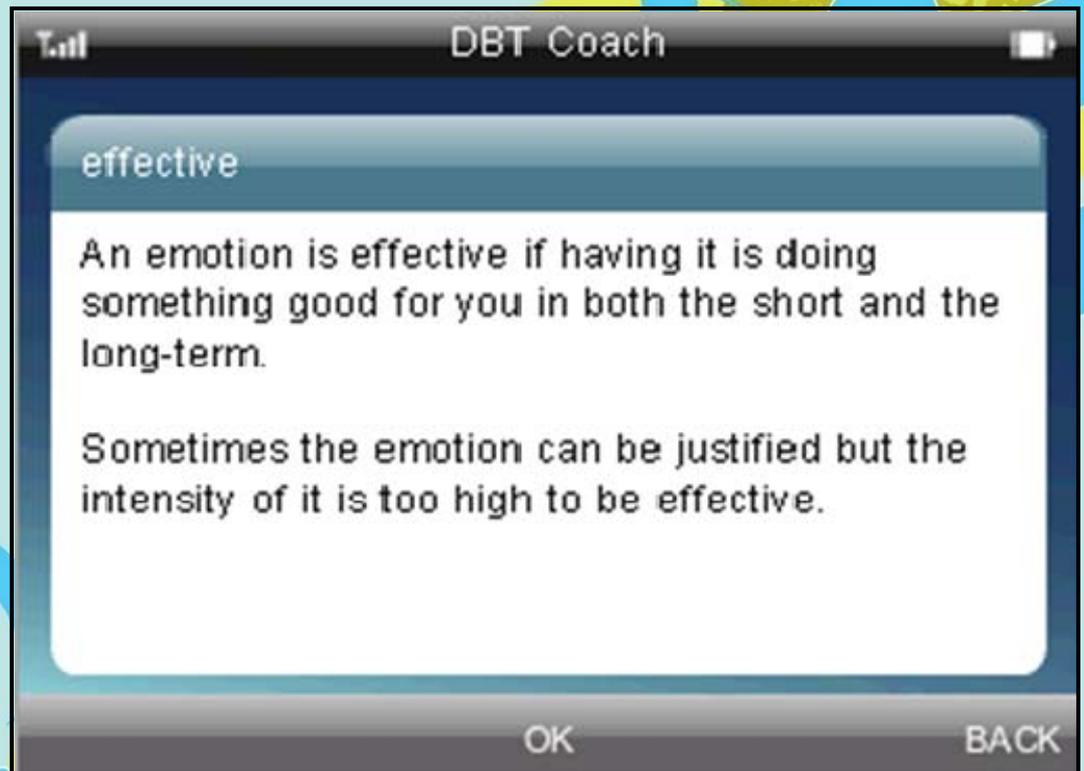
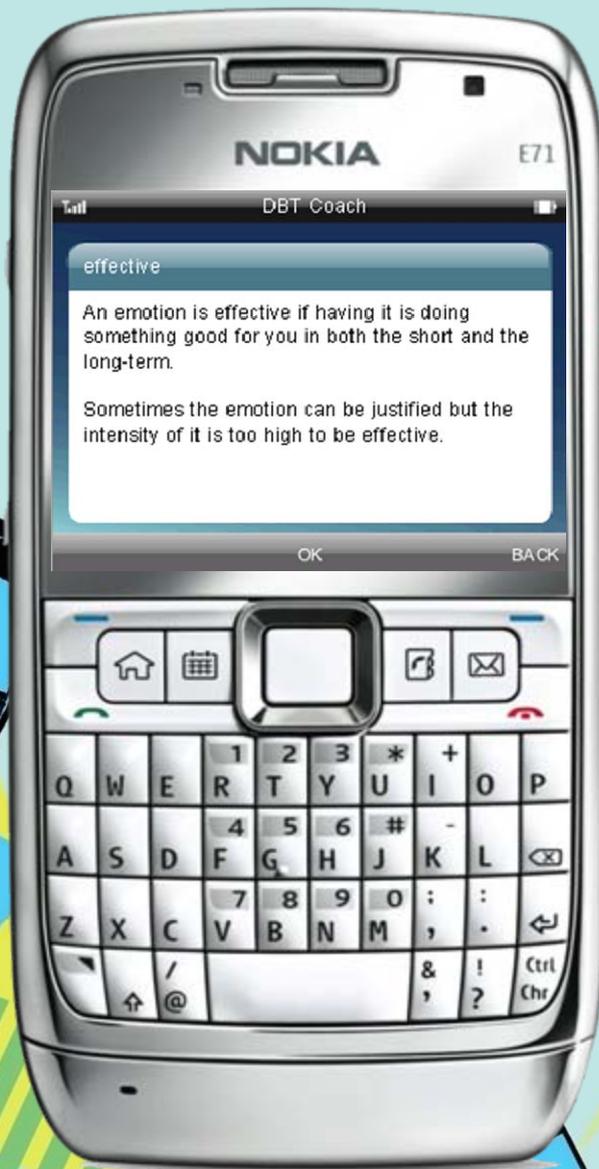
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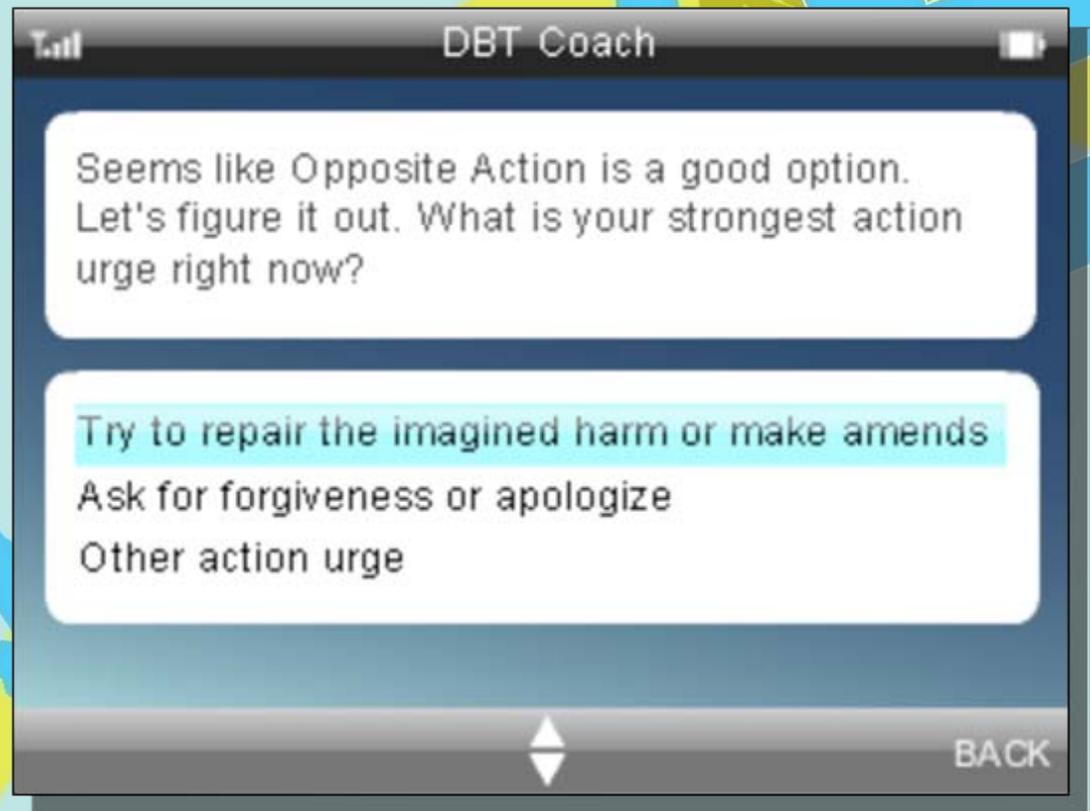
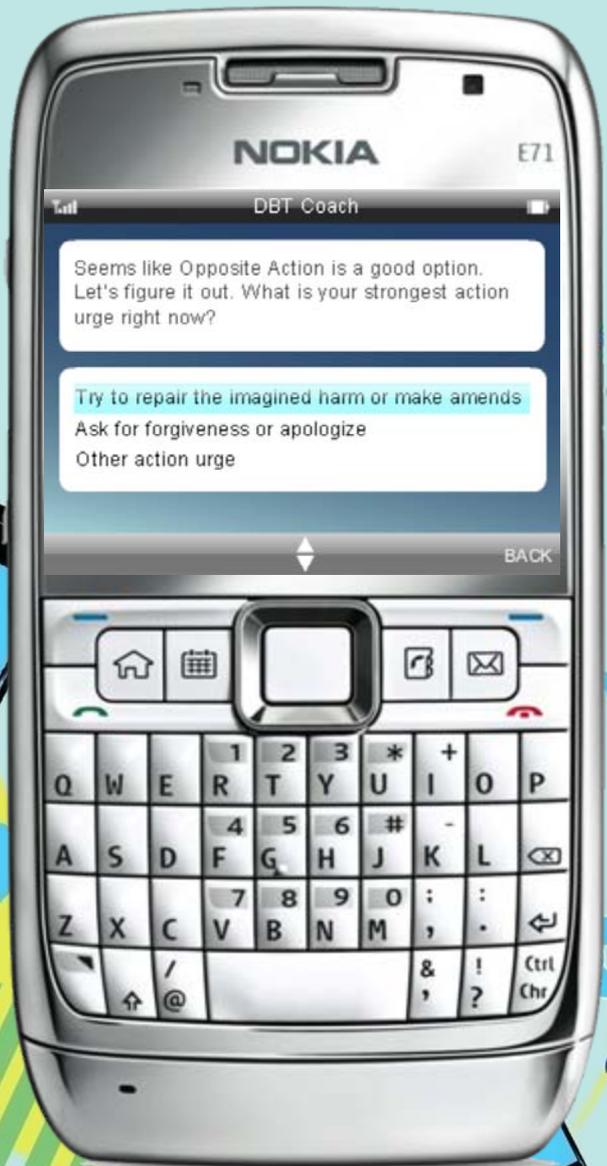
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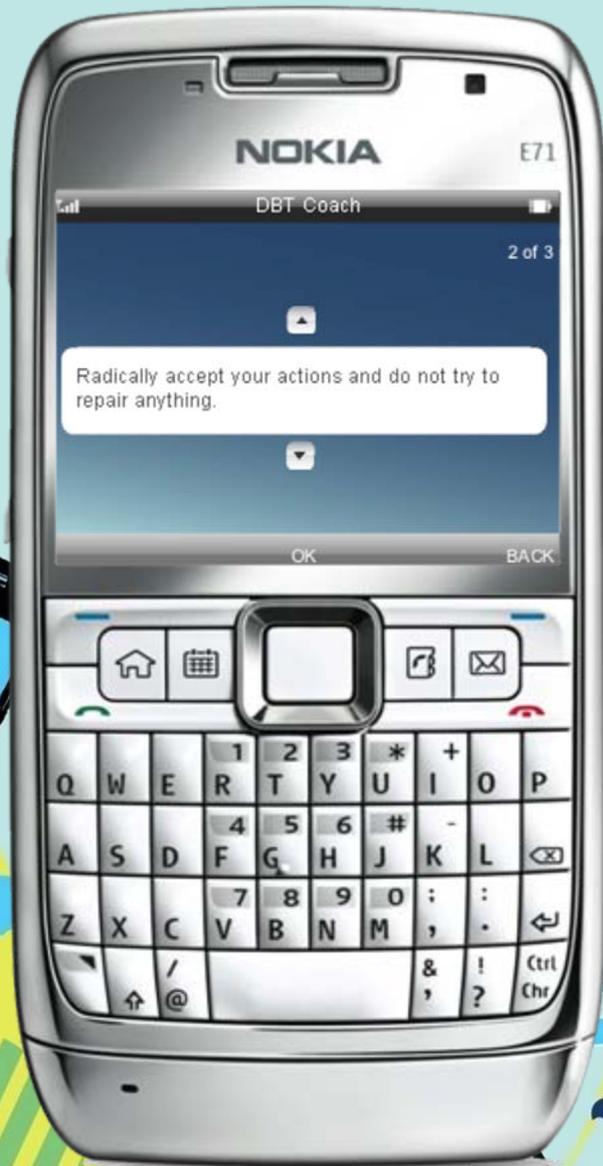
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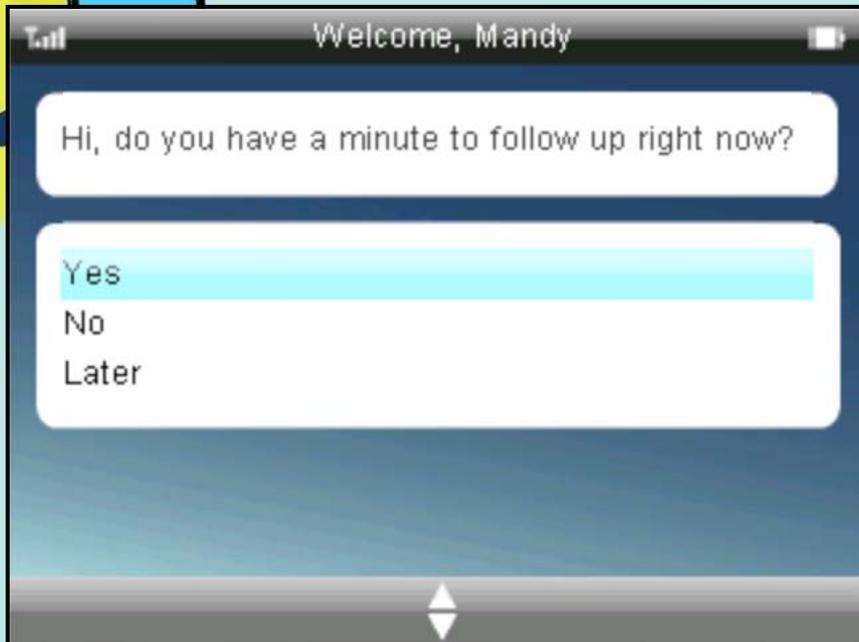
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Pilot Trial

- Within-subjects pre-post design
- All participants were BPD-SUD and in comprehensive, outpatient DBT
- Provided phone with DBT Coach app for 10-14 days
- Instructed to use DBT Coach whenever they wanted
- Instructed to complete Daily Assessment every day
- Compensated up to \$170



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Participants (N=22)

- 81.8% female (n=18)
- 77.3% Caucasian
- 54.5% single, never married
- 59% no college degree
- 59% unemployed
- 70% less than \$15K/year income
- SUD
 - 9% of the sample reported problems with alcohol, 18% reported using marijuana on a regular basis, 13.5% reported using methamphetamines and/or painkillers on a regular basis, and 72% reported regular cigarette use.



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Results

- General DBT Coach usage
- Usability and Satisfaction
- Effects of DBT Coach on emotional intensity and urges to use substances



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DBT Coach Usage

- Days with phone: $M=12.86$ ($SD=2.17$)
- Compliance with Daily Assessment: $M=85\%$ ($SD=.14$)
- Avg number of DBT Coach uses: $M=14.91$ ($SD=8.40$), range: 2-34
- Most commonly selected emotions: sadness (25.9%), fear (20.7%), anger (18.0%), shame (11.6%)



Usability and Satisfaction

| | <u>Mean (SD)</u> |
|---|------------------|
| How much did you enjoy using the DBT Field Coach? | 3.32 (1.21) |
| How helpful do you imagine this tool will be to individuals with BPD-SUD? | 3.95 (1.07) |
| How likely is it that you would use this tool in your treatment? | 4.05 (0.90) |
| How easy was it to navigate the tool? | 4.68 (0.57) |
| Overall rating of the tool in terms of helpfulness in assisting learning and practicing skills | 3.80 (1.16) |
| Would you recommend that we continue to develop the tool? | 4.68 (0.65) |



Effects of DBT Coach

- Within immediate coaching session (NLM)
- Ratings of emotional intensity were significantly higher at the beginning ($M=6.83$, $SD=2.09$) versus the end ($M=5.69$, $SD=2.31$), $B=-1.26$, $SE=0.20$, $t(21)=-6.17$, $p<.001$
- Ratings of urges to use substances were significantly higher at the beginning ($M=4.84$, $SD=3.23$) versus the end ($M= 3.95$, $SD=2.80$), $B=-0.92$, $SE=0.22$, $t(21)=-4.22$, $p<.001$



Effects of DBT Coach

- From 1st coaching to follow-up (176 uses)
- Only ratings of emotional intensity were assessed
- Ratings of emotional intensity were nearly cut in half, from an average of 7.11 ($SD = 2.00$) initially to a mean rating of 3.99 ($SD = 2.23$) at follow-up.
- Results from the HLM analyses indicate that the reduction in emotional intensity was significant ($B = -3.04$, $SE = 0.34$, $t(21) = -9.06$, $p < .001$)



Pre-Post Trial Results

- Using Daily Assessment data, significant reduction in urges to use over course of trial, $B=-0.11$, $SE=0.05$, $t(21)=-2.26$, $p=.035$
- Significant increase in confidence in ability to identify different components of OA and ability to appropriately use OA when needed
- Depression scores (BDI) were significantly lower, from 25.91 ($SD=9.90$) to 20.32 ($SD=10.51$), $t(21) = 2.69$, $p=.014$
- Global distress scores (BSI-GSI) were significantly lower, 1.85 ($SD=.65$) to 1.54 ($SD=.76$), $t(21) = 2.49$, $p=.021$



Conclusions

- DBT Coach rated as effective and engaging, even with only one skill
- DBT clients used the application with immediate positive effects
- Pilot data indicate possible broader effects
- Controlled trial is needed
- DBT Coach holds promise as successful adjunctive tool for coaching DBT skills



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Future Work

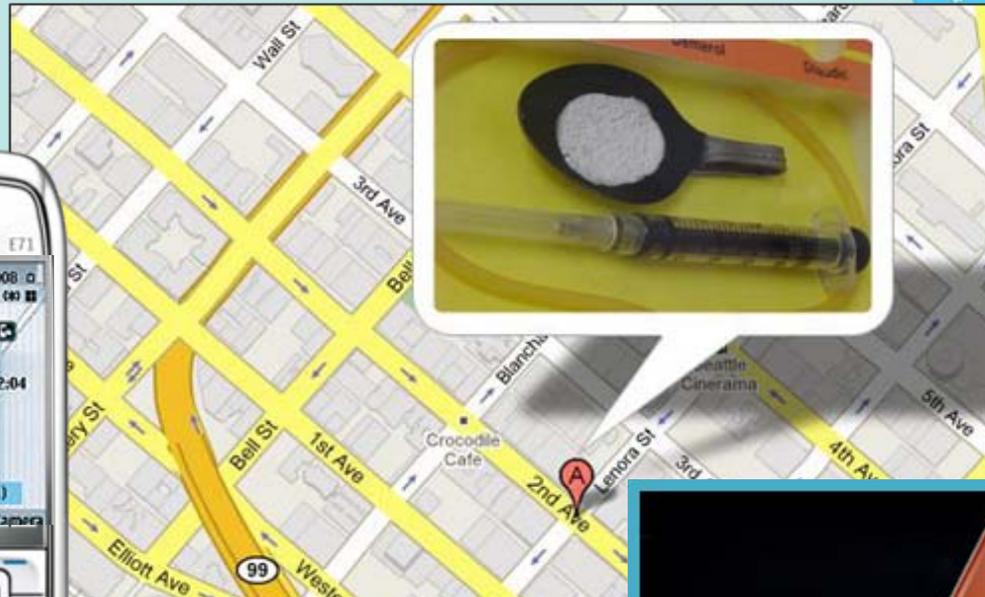
- Expand Material to other DBT skills
- Expand Availability to iPhone and Android Phones
- Expand Applications
 - Skill of the Day
 - Rainy Day Recordings
 - 100 Reasons
 - Diary card recording
- **Develop Contextual Intelligence**



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Contextual Intelligence: GPS



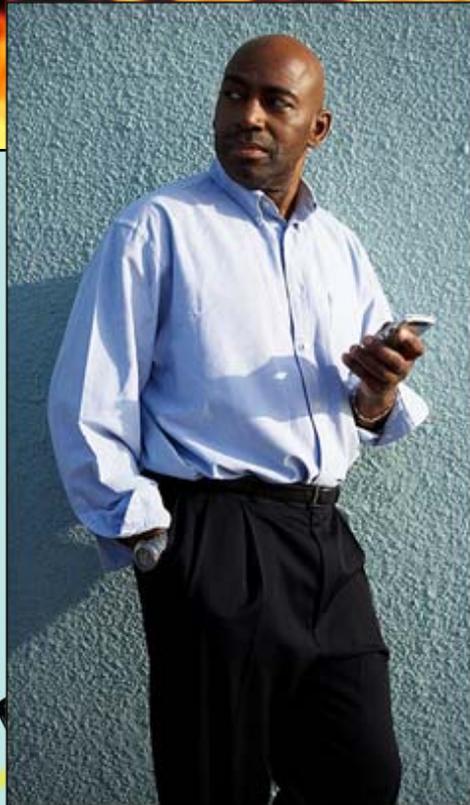
Getting really close to a hot spot.
Do you need skills coaching?

Yes

No



Contextual Intelligence: Caller ID



Do you really want to take this call?
Check wise mind.

Yes

No



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