







The acceptability of and real time engagement with a context-aware smartphone smoking cessation app (Q Sense)

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Conflict of interest statement: None

Background

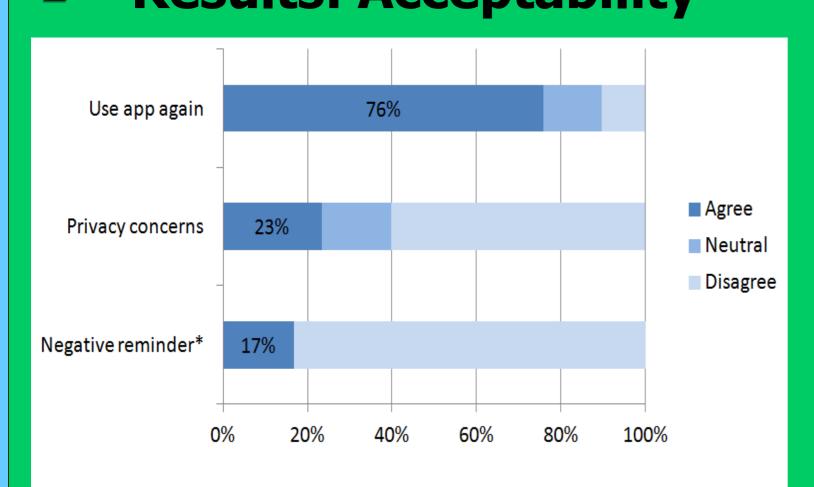
- Cues to smoke from the environment are implicated in almost half of all smoking lapses (Shiffman et al, 1996)
- Q Sense is a smartphone app that delivers real time lapse prevention support when a smoker enters a location where they would usually smoke. This 'geofence-triggered support' is tailored to what the app has learnt about what cues the smoker to smoke in that location.
- Q Sense is feasible to use by smokers (Naughton et al, 2016, JMIR mHealth uHealth), though they underreport smoking. However, acceptability has yet to be established.

Objectives/Methods

Objectives

- 1 Assess acceptability
- 2 Estimate the speed of engagement with geofencetriggered support messages
- **3** Estimate disengagment from the app
- Mixed methods design (app data, follow-up survey) & 1-to-1 interviews)
- Participants were smokers, receiving/motivated to receive cessation support (N=42)
 - 55% were female
 - 50% were over 35 years old
 - 74% smoked within 30 mins of waking
- Participants used app prequit (~7 days) and postquit up to 28 days
- Follow up survey at 28 days post quit date (n=30 out of 42; 71%)
- Purposive sample invited to interview (n=9), analysed using thematic analysis

Results: Acceptability 1



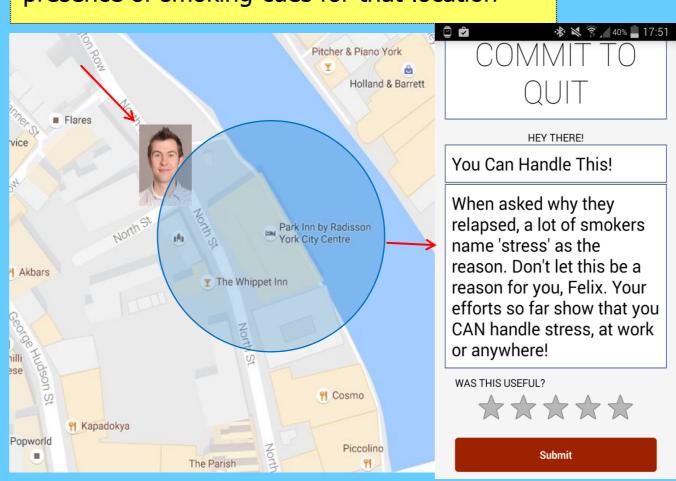
* Subsample followed up who received geofence triggered support

"When [the messages] actually came through it was as if the programme was written for me. Seriously that is what I did feel...because it was coming through at the times when I felt that I would have smoked." (ppt 1)

"Some of [the messages] were useful and some of them seemed very daft. Yes. Some were very irrelevant to me personally, I thought."(ppt 21)

Q Sense

Geofences (virtual perimeters) are created when a smoker reports smoking on the app, in advance of their quit date. Smoking reports include items about the presence of smoking cues for that location



If/when the smoker enters or spends time in a geofence during their quit attempt, support messages are delivered in real time, tailored to the likely smoking cues the smoker will be exposed to in that location

Conclusions

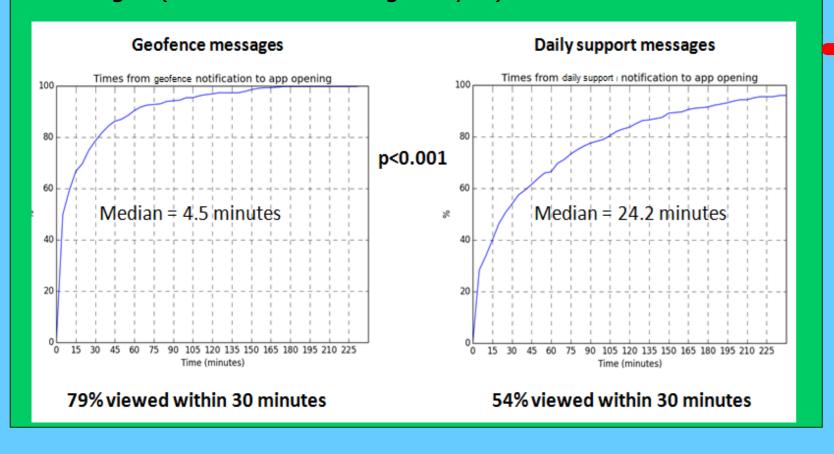
• 3/4 would use Q Sense again

Over half of geofence messages engaged with, most viewed within 5 mins

1/2 of interaction episodes driven by notifications

Results: Engagement

- 2,879 interaction episodes with app (> 1 minute apart). Mean of 70 (SD 75) per participant
- Of 3,090 notifications, 1,483 (48%) engaged with (i.e. notification tapped to view message)
- Of 769 geofence notifications, 432 (56%) engaged with
- Of those geofence messages engaged with, median time to engagement with notification (n=15) = 4.5 mins. Geofence messages were viewed significantly quicker than daily morning messages (multi-level modelling analysis)



Results: Disengagement

• Last completion of an app survey or rating a message

