DietLens (NUS)

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Overview

- Traffic light diet
- Social networks
- Nudging food choices
- Food influencers
Need for diet interventions

- Diabetes is a preventable disease
- DietLens has the potential to attack the contexts in which this disease flourishes  (Ming, Z.-Y. et al., 2018)
Need for diet interventions

Social burden

- 440,000 Singapore inhabitants currently diagnosed
- 1 in 3 lifetime risk of becoming diabetic
- 50% heart attack patients & 40% stroke patients are diabetic
- 1,500 amputations a year - 4 today (National registry of diseases, 2014)

Economic burden

- S$1Bn - current treatment and management of diabetes
- S$2.5Bn - projection 2050 (Png et al., 2016)
Project 1
Research Question: To what extent does the perception of information in the DietLens app affect behavioural change?
DietLens

- Displays detailed nutritional information
- User’s nutrition knowledge may be limited
- Creates time and knowledge barriers for the user
User experience goals

- Target of retaining users for 6 months (Oldroyd, 2001)
- Intuitive design
- Easy to use
- Minimal time consumption
Traffic light diet

• Associate colours with the quality of food (Johnson et al., 2014)

• Traffic light metaphor

• Quick & easy to understand
Project 2
Research Question: Can small online social networks improve communication between members of real-life food sharing networks in order to encourage behavioural change in dietary choices?
Project 2

• Research shows that enduring social change is most effective when it takes place in a social context.

• This project takes advantage of the ease of use of photo-optimisation to improve communication ties.

• Provides data which can be harvested to identify key individuals in long-term dietary change.
Small social networks representing enduring real life social bonds in diet management
Functions within the app

- Link with others and form small social network groupings
- Share information on food consumption that day
- Asked to identify an ‘encourager’ within their network
- Participate in reward schemes etc. for healthier diet choices/encouraging others/group improvements
Project 2

- Material ties (food sharing) pre-exist the online network
- Communication ties on daily food consumption can be weak and improved
- Recording the social aspect of food sharing could provide insightful data
Interventions which target dyadic relations or …
community networks which are based on enduring social relationships improve diet choices among those at risk of diabetes over longer periods of time

(Spencer-Bonilla et al., 2017)
Project 3
Research Question: How can we use [the] data to encourage users to make better food choices, and continue to do so?
Nudge theory

• Originated with Thaler and Sunstein’s book of 2008 which introduced the idea

• Refers to ‘choice architecture’ that “…alters people’s behaviour in a particular way without forbidding any options or significantly changing their economic incentives.”

• A ‘nudge’ must be ‘cheap and easy to avoid’, e.g. supermarkets placing promotional items at the end of aisles
Nudge theory

- Nudges can be implemented by a wide range of actors
- For example, government, family and/or friends and/or co-workers that have set up a social group from within the app.
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Mindspace

• The government setup a Behavioural Insight Team (known as the ‘nudge unit’) in 2010

• Identified use: Healthy and Prosperous lives

• “A central goal of policymakers is to make citizens healthier and more prosperous.”
Possible applications

• Positive messages generated from within the app encouraging healthy choices

• Congratulating the user on reduced sugar & fat intake over a meal / day / week /month

• ‘Like’ notification generated through the app by an invited member of the user’s family / friends / co-workers

• Rewards
Project 4
Food influencers

• Who are they?
• How can we harvest the data?
Who are they?

Dr. Khor, who is also adviser to the Women’s Integration Network Council, said women play a key role in taking care of their families and have significant influence over the diet and lifestyle of other family members.

Is the decision maker the same as the influencer?
Who are they?

US: Members of the Mexican/Hispanic Community.

“Out of 7596 social network members, enumerated by the participants, 645 (8.5%) were identified as encouragers for dietary behavior. Of those, 23% were biological children, 17% were spouses, 17% were mothers…”

Participants were asked who had encouraged them to eat well.
Data gathered & harvesting

• Photos of food

• User invites friends / family / co-workers to monitor progress (encourages), indicating relationship with the user

• Prompt question: who encouraged you the most this week?

• Counting number of ‘likes’

• Using the app to generate pre-set messages of encouragement and/or emoticons
Conclusion

- Need for diabetes intervention & prevention
- Consideration towards the display & interpretation of information in the app
- Use of social networks to intervene & improve diet
- Offer small choices to nudge people towards and improved lifestyle mindset
- Use of data to gain an improved understanding of the setting in which diabetes sits
References


