Developing complex internet interventions to change behaviour: using think aloud studies for theoretical modelling

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Combining usability testing and theoretical modelling

 usability testing = qualitative studies for website development;

identify navigation problems, assess satisfaction with content, format etc.

 theoretical modelling = qualitative research for intervention development;

understand motivations, reasons for engaging or not engaging with intervention etc.





Illustration: development of the Internet Dr

- 'Internet Dr' = theory-based intervention to help people self-care for cold/flu symptoms Draws on:
- Bandura's Social Cognitive Theory builds self-efficacy and positive outcome expectancies for self-care
- Leventhal's Common Sense Model provides reassuring explanations for symptom profile, duration, causes
- Fogg's principles of 'persuasive technology' incorporates humanising features to increase trust/engagement



Qualitative study 1

- Piloted planned web-pages in paper format using think aloud method
- 21 people purposively sampled, advertised for people with current/recent flu symptoms
- 15 females and 6 males aged between 18-62 years (12 students)
- thematic analysis, drawing on techniques from grounded theory

Usability themes concerning:

- specific page content or format;
- general website format (e.g. colour, navigation, terminology);
- reactions to the advice given on whether to consult the doctor;
- reflection on the circumstances in which they would consult the doctor rather than (or in addition to) the website;
- specific suggestions for altering, updating or expanding what the website provided

Theoretical themes concerning reactions to information:

Positive themes

- The information is helpful, reassuring and trustworthy
- Could identify with the information provided matches personal experience
- The information is interesting or useful for future reference

"I think that's fine because it tells me the reason, it tells me when I, it tells me that I don't need to see the doctor, it tells me what I would look for." [female, graduate]

"That's helpful, even though I already knew that already, but it's helpful because it tells you exactly what causes the problem ... next time that happens you know you go to the chemist and take lozenges, or to just take paracetamol – yeah, it's really good." [female, student]

Negative themes

- Information provided is excessive, overwhelming
- Excessive information impedes accessing advice quickly

"It's too much for a first page, I'm already bored [laughs] it's too complicated, I'm a simple person." [male, non-graduate] "I think maybe the text is a bit too long, I mean I'd rather just get to the point straight away, and say 'You don't need to see the doctor' on a bullet point, and then the available treatments on the next page, and then if further just click here." [male, non-graduate]



Theoretical modelling

Key question: how much information should be presented, to whom, and in what way?

- Theory and research on preferences for information-seeking suggest some people prefer less information (often men, older people, lower education)
- Developed website in which detailed information optional, to maximise accessibility to all
- Carried out second study to elicit views of website of men and women with low/high education levels





- Windows Internet Explorer		
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Click on the symptom you would like advice for: Welcome Cough Sore Throat Runny/Stuffy Nose Fever		nternet Ooctor
How to consult the Internet Doctor So that we can give you the right advice, we need you to answer a few questions about your symptoms. After you click 'Next' at the end of the page, all your answers and advice will be saved during this session. This mean you can go back to check or change your answers if you want to. Image: Doctor's Durstions How long have you had your sore throat for? 	ns	E
 Over the last week has your sore throat got better, worse or stayed much the same? My sore throat is getting a little better, but too slowly My sore throat is not getting better at all My sore throat is steadily getting worse 		
 Do you have any difficulty swallowing? None, slight or some Yes, I find it very difficult to swallow - I am not able to drink enough to stop being thirsty and I have a dry mouth I can't swallow at all (not even my own saliva) 		
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Qualitative study 2

- Piloted website using think aloud method
- 26 adults (14 female and 12 male) aged between 18-63 years, internet use ranged from 0-63 hours/week
- 12 graduates, 14 non-graduates including people with minimal qualifications
- thematic analysis, with systematic comparison of themes by gender, education

- There was a lot of information available, which I found was very good information. [female, pharmacist, PhD]
- *I am quite impressed about how informative it is.* [male, unemployed, vocational qualification NVQ level 2]
- My general feeling is, there's a lot of really useful information on here. [female, student]
- The information that was there, that was good information, so the content I suppose you could say I like, the information was good. [male, shop worker, GCSE]
- I did like the site and I certainly will go to the site again. [female, home-maker, Portugese high school certificate]

- Very enthusiastic about 'treatment options' information
- Mixed views of diagnostic questions

I am starting to answer the questions quickly and not really think about them so much because there are quite a few questions. [male, PhD student]

There's quite a lot of questions in there but I understand you need to ask that for medical reasons, I don't mind asking answering [sighs] answering questions because obviously you don't want that advice to be wrong. [male, scaffolder, vocational qualification – City and Guilds]



Conclusions: website-specific

- Next iteration of Internet Dr should allow users further freedom to choose – can go straight to 'treatment options' without our symptom assessment
- Modifications can be easily carried using the 'LifeGuide' software for creating and evaluating webbased interventions

www.lifeguideonline.org

• Will carry out full randomised controlled trial of modified Internet Dr this autumn

Conclusions: wider implications

- By combining usability testing with theoretical modelling may be able to contribute to more general principles for understanding and delivering selfcare
- Educational level need not be a barrier to valuing web-based access to indepth self-care information, if users feel they have choice and control and can quickly access the specific information they value.



Thank you for listening.

If you would like to use the free LifeGuide software to create internet interventions find out more at

www.lifeguideonline.org

or visit our stall at the next break!