Institution: University of Chichester

Unit of Assessment: Psychology, Psychiatry and Neuroscience

Title of case study: An internet-delivered behavioural intervention for people diagnosed with diabetes

1. Summary of the impact

This case study describes two types of impact. First, awareness of a health benefit has been raised in the treatment of people with diabetes, second, people with diabetes' attitudes to the treatment of diabetes has changed. These impacts were achieved in collaboration with health professionals working for two NHS trusts (Western Sussex Hospitals NHS Trust and Sussex Community NHS Trust) through the development of new educational materials to increase people with diabetes' awareness of diabetes and diabetes self-care behaviour.

2. Underpinning research

Good diabetes self-management has been shown to reduce the risk of developing serious health complications (e.g., heart disease, stroke, blindness, kidney disease, nerve damage and amputations), enhance quality of life, and reduce hospital admissions. Successful diabetes self-management requires knowledge about diabetes and its associated treatment, proficiency in the competencies and skills required to control diabetes (e.g., complex nutritional practices, weight management, frequent monitoring of blood or urine glucose, foot care), and intent to engage in multifarious self-management behaviour. Hence, information provision, motivational enhancement, and skills training form key components of the self-management approach.

Resistance to health promoting messages is an important barrier to successful self-management however, and such resistance is often strongest amongst those most at risk.A major challenge facing health promoters is the tendency for people to process personally relevant health-risk information defensively. To address this problem Dr Churchill has developed a systematic experimental paradigm to test the influence of variables that may counter defensive processing of personally relevant health-risk information, with a view to designing effective health communications.

Dr Churchill's work within the domain of message framing was the first to show that persuasive communication about the benefits of health-related behaviour is dependent on recipients' level of autonomy (the extent to which an individual perceives the target behaviour to be freely chosen and under volitional control rather than controlled by external forces), and the first to show that experimental primes to bolster feelings of autonomy (words relating to independence, freedom and choice) could be successfully incorporated within health communication to facilitate message acceptance and increase message persuasion. Messages that imply personal inadequacy (e.g. failure to eat healthy diet, exercise, control diabetes) are often resisted because they threaten the recipient's sense of control over important outcomes. A key insight is that high levels of autonomy (whether naturally occurring or primed) can reduce the extent to which a person responds defensively to health information that might highlight personal inadequacy, as acting with higher autonomy suggests that the behaviour is fully integrated with the person's true interests and values. Autonomy manipulations thus offering a promising solution to the pervasive problem of resistance to health messages and other unwelcome information.

In summary, the research underpinning the current case study demonstrated that characteristics of audience members which relates to independence and control over behaviour can shape receptivity to persuasive health information and to provide people with health information that is maximally effective messages about the benefits of action should deliver information in an autonomy supportive fashion.

Dr Susan Churchill joined the recently formed Department of Psychology at the University on 2/8/2010.

3. References to the research

Churchill, S. & Jessop, D. (2010). Spontaneous implementation intentions and impulsivity: Can impulsivity moderate the effectiveness of planning strategies? *British Journal of Health Psychology, 15*, 529–541

Churchill, S., & Jessop, D. C. (2011). Too Impulsive for Implementation Intentions: Evidence that Impulsivity Moderates the Effectiveness of an Implementation Intention Intervention. *Psychology and Health, 26*, 517-530

Michie, S., Churchill, S., & West, R. (2011). Identifying evidence-based competences required to deliver individual and group-based behavioural support for smoking cessation. *Annals of Behavioral Medicine, 41*, 59-70

Churchill, S., Pavey, L., (2013). Promoting fruit and vegetable consumption: the role of message framing and autonomy, *British Journal of Health Psychology,* 18, 610–622, doi: 10.1111/bjhp.12007.

Pavey, L., & Churchill, S. (2013). Promoting the avoidance of high-calorie snacks: Priming autonomy moderates message framing effects. Manuscript submitted for publication.

Jessop, D., Sparks, P., Buckland, N., P. Churchill, S., (2013) Combining Self-Affirmation and Implementation Intentions: Evidence of Detrimental Effects on Behavioral Outcomes, *Annals of Behavioural Medicine*, DOI 10.1007/s12160-013-9536-0 (published online Oct 2013)

4. Details of the impact

The impact, beneficiaries and pathways arising out of Dr Churchill's research are described below:
The beneficiaries to date are:

- a range of health professionals (e.g. consultants, specialist nurses, dietitians, podiatrists)
- Diabetes expert patients and diabetes patients and carers.

The specific impacts, achieved through direct engagement with the design, development and evaluation of an autonomy supportive internet-delivered educational programme about diabetes and diabetes self-management behaviour, are:

- For the health professionals, changed understanding and awareness of the value of message framing in supporting autonomous self-care behaviours of people with diabetes concomitant with stated intentions to change practice, training and guidance around ongoing work with such patients,
- for those with diabetes, changed attitudes towards self-management of diabetes behaviour.

Once implemented the research will also achieve further significant impacts for people with diabetes.

Project activities

Dr Churchill engaged in various activities to realise impact from her research insights.

Phase 1: Project initiation

Dr Churchill met with diabetes specialists (e.g., consultant, podiatrists, dietitian, specialist nurses) from two NHS trusts (Western Sussex Hospitals NHS Trust and Sussex Community NHS Trust) in focus groups to discuss key research insights regarding the role of autonomy in reducing defensive processing of personally relevant health-risk information.

Phase 2: defining structure and design

Dr Churchill and health professionals agreed that the educational materials would be set out in five sections and presented in an autonomy-supportive fashion.

1. 'What is diabetes': background information about diabetes (e.g. symptoms, causes, risk factors)
2. 'Monitoring and treatment': information on the management of diabetes (e.g., monitoring blood sugar levels, insulin therapy, medications)
3. 'Foot complications': information about diabetes-related foot complications and how you might look after your feet
4. 'Looking after you': self-care behaviours that can help people with diabetes reduce the risk

of adverse health consequences associated with their illness (e.g., diet, exercise)
5. 'Living with diabetes': information about living with diabetes on a day-to-day basis

Phase 3: development phase
Diabetes specialists were involved in all stages of the design and development of the behavioural intervention: providing educational materials, reviewing materials, providing links to external sources (http://www.nhs.uk/conditions/diabetes/pages/diabetes.aspx, http://www.diabetes.org.uk/). Discussions in focus groups and meetings indicated that diabetes specialists were changing one-to-one patient education practices based on dissemination of key insights regarding the role of autonomy in reducing defensive processing of personally relevant health-risk information, i.e., presenting their advice in an autonomy supportive manner.

Phase 4: evaluation of the internet-delivered intervention
The educational materials were reviewed by diabetes specialists, non-specialist clinicians and expert patients.

The next substantive phase (occurring after 31/7/13) is the implementation of the tool as per the stated intentions of the health teams, this is pending the completion of a memorandum of agreement between the University and the relevant trusts. This memorandum has been developed collaboratively and will be in place before the end of 2013.

Stakeholders engaged in the project
The project involved 22 separate meetings with health professionals across 20 days in the period March 2012 to June 2013. Those health professionals directly involved in various of these meetings include one consultant and one Speciality Coordinator for Endocrine & Diabetes, one Diabetes Specialist, three Specialist Nurses, one Nurse Consultant, one Dietitian, three Podiatrists. In addition, Dr Churchill engaged Diabetes expert patients throughout the project. Dr Churchill met twice at an early stage with a group of 4 expert patients to discuss the function, educational content and structure of the tool, attended a DESMOND clinic where the tool was evaluated by 8 expert patients who provided feedback on usability, design, and educational materials, with two further expert patients providing online feedback. Either Dr Churchill or members of the University team attended a total of 3 diabetes clinics and interviewed a total of patients (18) and their carers (15) to get feedback on educational materials and usability etc..

Meetings held independently by the health professionals directly engaged in the project occurred on in April and May 2013 in order to review materials and discuss their dissemination. Meetings known to have occurred include, for example, at least 2 meetings of the podiatry team (c.6 podiatrists), 3 meetings of the specialist nurse team (c.5 specialist nurses; one meeting included the Head of GP services in West Sussex), and at least three meetings of the small team (2 or 3) of Dietitians. Furthermore, anecdotal evidence indicates that the tool has been discussed informally across the diabetes teams, and that they worked together between clinics to identify and collate materials and that discussion took place across disciplines.

A follow up survey to ascertain the impacts of the work was undertaken and informs the subsequent statements.

Significance of the Impacts
The significance of the impacts in terms of how much difference it has made to beneficiaries is listed as follows:

- The dissemination of Dr Churchill's key research insights regarding the role of autonomy in message acceptance and persuasion has informed diabetes specialists' strategic information provision, motivational enhancement, and skills training;
- Diabetes specialists reported that team meetings were convened to discuss how they might present the benefits of diabetes self-management behaviour in an autonomy supportive fashion in their verbal communications with patients;
- The health professionals reported that they intend to use the intervention to refresh their knowledge of diabetes and diabetes self-care behaviour; also,

- The health professionals said that they would recommend the behavioural intervention to people with diabetes, carers of people with diabetes, and other health professionals (e.g., district nurses, care assistants, GPs).

People with diabetes (and carers of people with diabetes) reviewing materials indicated that the presented materials improved their:

- knowledge about diabetes (e.g., types of diabetes [e.g., type 1, type2, MODY, Gestational diabetes], diagnosis, causes, risk factors);
- knowledge about the management of diabetes (e.g., monitoring blood glucose levels);
- knowledge about the foot complications associated with diabetes (e.g., neuropathy, foot ulcers, amputation);
- knowledge about self-management behaviours (e.g., foot-care, diet, physical activity);
- knowledge about the skills required for effective self-management behaviours;
- knowledge about living with diabetes (e.g., dietary choices during Ramadan).

People with diabetes indicated that the diabetes materials encouraged them to think about their current self-care behaviour and changed their attitudes towards engagement with diabetes self-management behaviour. People with diabetes said that the materials were presented in a way that was 'non-threatening' and that encouraged them to 'look after themselves', increasing frequency of self-care behaviour

Hence, attitudes regarding the effectiveness of self-management behaviour in reducing risk of diabetes complications have been changed, encouraging self-management behaviour and potentially reducing costs to the NHS.

5. Sources to corroborate the impact

1. Link to the internet-delivered intervention
   https://www.lifeguideonline.org/player/play/chidiabetes
2. Follow-up data (emails and responses to survey questions) available upon request
3. Record of project meetings with health professionals available upon request
4. Testimonials may be requested from:
   Dr Deborah Bosman (Consultant)
   St Richard's Hospital
   Diabetic medicine services
   Spitalfield Lane
   PO19 6SE Chichester
   Phone:(01243) 788122

   Kerry Barnes, Lead Diabetes Specialist Nurse at Sussex Community NHS Trust
   Diabetes Centre
   St Richards Hospital
   Spitalfield Road
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   Phone (01243) 831614