EULAR 2022 POS1510-HPR

Identifying theory-driven therapeutic content for a smartphone app for the self-management of Sjogren's Syndrome

Dr Miglena Campbell, Teesside University, England, UK
Dr Claire McCallum, University of Bristol
Prof. Vincent Deary, Northumbria University at Newcastle
Prof. Jason Ellis, Northumbria University at Newcastle
Prof. Tim Rapley, Northumbria University at Newcastle
Prof. John Vines, University of Edinburgh
Dr Katie Hackett, Northumbria University at Newcastle

The DIGITS project was funded by Versus Arthritis, grant number 22026

Introduction

Interventions should be developed systematically. Systematic processes and methods exist to support assessing needs specific to the given population/patient group the intervention is intended for, e.g., identifying intervention targets through concept mapping. Systematic frameworks of generic active ingredients exist to support the inclusion of evidence-based behaviour change components and features. One such framework is the Behaviour Change Technique Taxonomy [1], however there are competing schools of thought, e.g., Behaviour Change Methods Taxonomy - Intervention Mapping Approach [2].

FoD pertains to "all features through which behaviour change intervention content is conveyed, incl. the provider, materials, format, setting, intensity, tailoring, and style" [3]. It has been proposed that FoD can be important in operationalising theory, may enhance or undermine behaviour change techniques (BCTs); can influence engagement, adherence, and fidelity; can influence effectiveness beyond BCTs: may be crucial for implementation and sustainability of interventions. It has been suggested that intervention form of delivery (FoD) is an active ingredient in its own right, however few systematic resources exist to support developers with it. Little is known about the fine-grained detail of this intervention development aspect.

In our intervention development study to develop a smart phone app for the self-management of Sjogren's Syndrome we started with intervention targets [4] and continued with selecting active ingredients. We took an agile approach: instead of developing "from scratch" we deemed it more efficient and more scientifically sound to digitalise existing, highly effective interventions for the symptoms of SS. Those were interventions for pain and fatigue (ACT, CBT), interventions for sleep (CBT-I), and resources for increasing knowledge on SS (patient literature from Versus Arthritis, NHS's CRESTA fatigue clinic, etc.).

Rationale and aims:

Given that we used a number of heterogenous interventions and resources for the creation of the content of the app, the aim of the present study is to deconstruct them, to reduce them down to "standardised" units of behaviour change: e.g., BCTs, BCMs and other therapeutic content, which we could then select from.

Method

We opted to perform a qualitative content analysis on secondary data: intervention inputs and resources. Analysis was conducted deductively and inductively. To begin with we used deductive analysis, which was informed by the Behaviour Change Wheel [5] and two taxonomies of active ingredients: BCTT [1] and the Taxonomy of Behaviour Change Methods: An Intervention Mapping Approach [2]. We maintained an open mind to the presence of any other content that appeared to be of therapeutic value. Next, we completed a round of inductive analysis, looking for any content related to form of delivery. Therapeutic content was coded as FoD when it related to how the intervention was delivered. Analysis took place on both semantic and latent level. It included producing deductive and inductive categories, that were then organised in final themes. MC conducted the bulk of the analysis, however ongoing discussions about any uncertainties were held with CM and KH. We adopted an epistemology of pragmatism for this work.

Findings

Five themes were conceptualised: Interactivity of Discourse, Validating Experiences, Prompting Reflection, Providing Treatment Rationale and Therapeutic Approaches.

Interactivity of Discourse encapsulated the idea that content was delivered by seeking to produce a dialogue between the resource/interventionist and the recipient and to provide a flow of information between them. interactivity was achieved through providing live links on digital document versions for the reader to click on. In addition, the text was framed by addressing the reader in second person, or phrasing content as questions:

"Does your heart race? Do you start to sweat? Do you sense that you are doing too much?" CRESTA booklet

"What is Sjogren's Syndrome? Who gets Sjogren's Syndrome?' Versus Arthritis booklet

Prompting Reflection pertained to the idea that behaviour change techniques and methods were used to produce extensive, ongoing contemplation in intervention recipients related to their experiences and self-management of symptoms:

"Write this down and keep it somewhere close at hand so that you can remind yourself to slow down when you start to feel this way."

Validating Experiences was a theme that captured the effort to normalise and socialise experiences of the illness. Recipients are encouraged to discuss their fatigue with each other, as well as their management strategies and difficulties with behaviour change. In paper-based

resources this effect was achieved using quotes from people with SS, to illustrate valid emotions in response to life with pain:

"I can't cope…There's nothing that will help me. I'm never going to get any better. I ought to be able to cope with this. I must get myself on top of these problems. I'm no good to anyone" Living with Pain Booklet

Providing Treatment Rationale was a theme which encompassed the justifications that interventions provided, prior to delivering active ingredients. Emphasis was placed on providing a sound, transparent, and credible reasoning that underpins what recipients were asked to do:

"The CBT-I theory is not necessarily intuitive. We need to understand how and why it works, in order to explain it to patients." CBT-I researcher field notes.

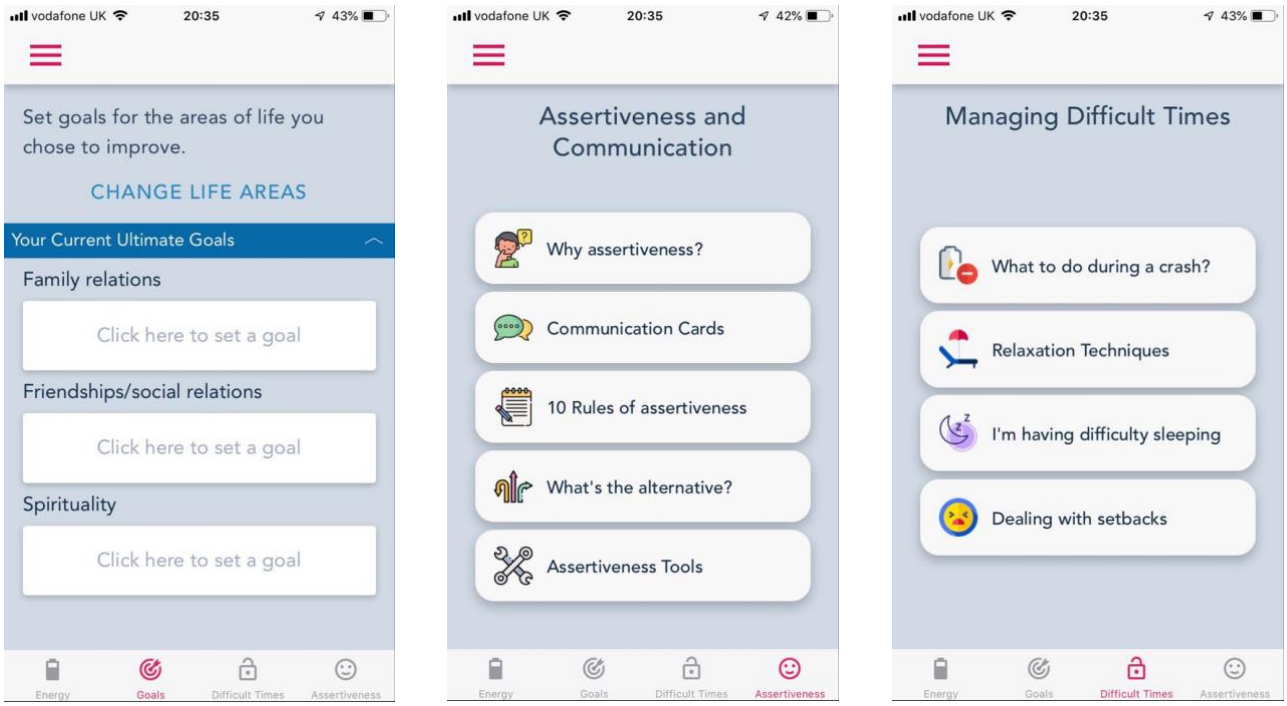
The theme Approaches captured the various therapeutic traditions which underpinned the content, i.e., second and third wave CBT:

"Chronic pain disrupts our thinking. You can't have a good short-term memory, good attention, or concentration if you have pain. It makes you forgetful and distractible" Living with Pain booklet

Discussion

- Psychoeducational content can be delivered interactively, we present evidence that even leaflets can accommodate some level of interactivity.
- Validating the experiences of recipients of interventions and providing them with a treatment rationale can potentially enhance other active ingredients and increase engagement with the intervention [3].
- Content can be delivered through imagery or through text [1,2], but little empirical evidence exists on what is best. Similarly, little is known on how to facilitate reflection best. Not everyone is able to reflect equally well. Some people require more structured and guided reflection, others reflect very well with little prompting. Guided and structured reflection could be accommodated in the even most basic and inexpensive of resources.
- Sometimes reflection and introspectiveness can be counter-productive to wellbeing, people's internal monologues can become overbearing, they can turn into rumination, over-concern, excessive vigilance, etc [6]. How do we know we only produce benign and constructive reflection?
- Developers should have an a priori strategy for how to integrate various therapeutic approaches.

Figure 1. Screenshots of the Sjogo smartphone app, including some examples of FoD therapeutic content.



Conclusions:

Therapeutic content exists beyond just behaviour change techniques and methods. FoD active ingredients are important and should be further explored and systematised.

REFERENCES:

[1] S. Michie, et al. Annals of Behav. Med 2013. 46:1
[2] G. Kok, et al. Health Psych Rev 2016. 10:3
[3] S. U. Dombrowski, et al. Brit. J Health Psych 2016. 21: 4
[4] K. Hackett, et al., Annals of Rheum. Disease, 2015, 74:2
[5] S. Michie, et al. The BCW, a guide to designing interventions. 2014
[6] E. Kross, et al. J. Personality and Soc. Psych. 2014. 106, 2:304