

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

**Background:** Technology-supported self-management of long-term conditions (e.g., through the use of smartphone apps) provides easily accessible support. However, currently there are no systematically developed, evidence-based smartphone apps for Sjogren's Syndrome. We took an agile approach to developing such an app: instead of starting "from scratch" we deemed it more efficient and scientifically sound to digitalise relevant components from existing, evidence-based interventions for the symptoms of SS.

**Objectives:** The present study was desk research, which aimed to deconstruct interventions and resources down to units of theory-driven therapeutic content, to then select from, for the inclusion in an app for the self-management of SS.

**Method:** We used deductive and inductive content analysis, to identify behaviour change techniques (BCTs)[1] and behaviour change methods (BCMs)[2]. The materials consisted of published fatigue, pain and sleep interventions (e.g. [3] and [4]), as well as private-facing clinician notes and public facing resources on self-management from Versus Arthritis and the UK NHS's CRESTA fatigue clinic.

**Results:** We found 38 active ingredients from the BCT Taxonomy and the BCM intervention mapping approach frameworks, of which at least 14 were overlapping in function. Importantly we noted that BCTs and BCMs were formulated in various ways pertaining to how the interventions should be delivered (form of delivery-FoD) [5]. Further qualitative analysis revealed 6 themes relating to FoD. The theme *Interactivity* involved presenting information in ways that would involve the reader in actively responding to it in various ways. The theme *Reflection* was about engaging the recipient in in-depth consideration of their own experience with symptoms and self-management processes. The theme *Validation* encompassed all the ways in which the illness and management experience was socialised and normalised to remove stigma and sense of isolation. The theme *Treatment Rationale* was about providing an a-priory transparent, sound, and compelling justification for the self-management actions required from recipients. The theme *Discourse* pertained to how information was being communicated, e.g., with language that is warm, simple, assertive, etc. Finally, the theme *Approaches* was about the therapeutic origins of the active ingredients, e.g. Second and Third Wave CBT. These themes indicate that meaningful therapeutic content is missing from commonly used theoretical frameworks for the development of interventions.

**Conclusions:** Our findings indicate that meaningful therapeutic content is missing from commonly used theoretical frameworks for the development of interventions. Interventions should not just include BCTs and methods, but also active ingredients pertaining to how these techniques and methods are delivered, i.e., active ingredients relating to FoD. Reflection deserves particular attention in self-management, as it is unclear empirically in apps what is the most effective way to produce the most useful psychological and behavioural insight, and for whom. FoD is a component of intervention development that requires systematising and the present findings can contribute to such efforts.

### 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. Hewlett, et al. *Ann. Rheum. Dis* 2019. 78: 4.
- [4] S. D. Kyle, et al. *Sleep Med Rev* 2015. 23.
- [5] S. U. Dombrowski, et al. *Brit. J Health Psych* 2016. 21: 4