

Ownby et al., “A mobile app for chronic disease self-management for individuals with low health literacy: A multisite randomized controlled clinical trial,”  
supplementary materials

## Supplementary Table S1

**Table S1. Content overview of chronic disease self-management modules**

Title	Topics
<b>Session 1</b>	
<b>Introduction</b>	<p>Goals of the course; definition of chronic health conditions and the kinds of problems they create. How the participants can become more involved in self-management and become a more active partner with their healthcare providers</p> <p>Self-management of problems that are common in multimorbidity, such as fatigue, sleep problems, shortness of breath, and pain.</p> <p>Definition of self-efficacy and how it can affect health; relation of self-efficacy to stress and coping; how to increase self-efficacy</p> <p>Overview of module topics to be covered: Fatigue, Pain, Shortness of Breath, Sleep, Mood, Anger, Stress, Working with Providers,</p> <p>Definition of self-management and how information in the modules can help develop self-management skills.</p> <p>Cognitive behavioral model: Using your mind to feel better</p> <p>Creating action plans</p>
<b>Adherence (content tailored to level of depressive symptoms as assessed by the CES-D<sup>1</sup>)</b>	<p>Goal: Helping participant to take charge of their health</p> <p>Questions on emotional support, medication adherence, and provider relation</p>

	<p>Healthy living</p> <p>Self-monitoring</p> <p>Strategies for medication adherence: schedule, pillboxes</p> <p>Making a list of questions for next visit with provider, "Ask Me 3"<sup>2</sup></p> <p>Impact of depression on adherence and feedback on mood from CES-D</p> <p>Becoming active in own healthcare; use of internet and how to judge websites; healthy living</p>
<b>Stress</b>	<p>Goal, definition</p> <p>Biology of stress</p> <p>Stress effects on the body, including worsening some health conditions</p> <p>Stress management: relaxation, meditation, goal setting and time management</p>
<b>Session 2</b>	
<b>Sleep (content tailored to level of depressive symptoms as assessed by the CES-D<sup>1</sup> and stress by the PSS<sup>3</sup>)</b>	<p>Purpose; association of chronic conditions and sleep problems</p> <p>Basic information about sleep, including sleep stages and relation of sleep to mood and energy</p> <p>Rules for better sleep: Sleep hygiene recommendations</p> <p>Sleep diary</p> <p>Creating action plan</p>
<b>Mood (content tailored to level of depressive symptoms as assessed by CES-D<sup>1</sup>)</b>	<p>Goal</p> <p>Effects of depression on energy, mental functioning, attitudes toward self-care</p>

Things that can worsen depression: stress, life events, alcohol and other substance use; some medical conditions

Cognitive behavioral approach to depression, identifying automatic thoughts, activity scheduling

Treatments for depression: medications, psychotherapy

Creating action plan

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## **Pain**

Goal

What is pain? Acute vs chronic pain

Factors that may exacerbate

Medications and substance use

Strategies for pain management, including working with provider on medication, physical activity, understanding the impact of mood on pain

Creating an action plan

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## **Memory**

Purpose

Memory Self-Efficacy Scale

How memory works; acquisition, storage, retrieval

Cognitive aging and things that can help memory, such as good sleep, exercise, mood; external memory aids

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## **Session 3**

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### **Fatigue**

Definition of fatigue, not merely tiredness; effects of fatigue on daily functioning

Managing fatigue: regular schedules, alternative treatments, self-help groups, counseling, learning more about fatigue, limited exercise (caution about CFS/ME patients)

Self-monitoring, tracking good days and bad, evaluating the relation between activity and fatigue

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### **Shortness of Breath**

Goal and definition

Anatomy of breathing, muscles involved in breathing

Consult with doctor; consider gradual increase in physical activity to reduce deconditioning

Do not smoke

Use medications, including inhalers, as directed

Breathing strategies: pursed lips and diaphragmatic breathing

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## Anger

Purpose

Mental processes related to anger

Things that make it worse: poor sleep, hunger, pain

Recognizing triggers and escalation

Anger, frustration, and chronic health conditions

Self-management strategies, avoiding triggers and escalation

Relaxation, deep breathing, self-talk, reframing

Avoiding alcohol and other substances

Getting professional help

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### Supplementary Figure S1:

## Other ways of taking care

Besides medicines, other things are important, too. Depending on the problem, being careful about what you eat can be a critical part of taking care of yourself.



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**Figure S1. Intervention screen encouraging healthy lifestyle**

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## Supplementary Figure S2:

### Working with Your Doctor

You can take a pen and paper when you visit the doctor and take notes. If you don't want to take notes yourself, take a friend with you to the visit. He or she can take notes and help you to remember what the doctor says.



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**Figure S2. Intervention screen showing suggestions for working with healthcare provider**

Note: Adobe® product screenshot reprinted with permission from Adobe.

#### References

1. Radloff LS. The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement* 1977; 1: 385-401.
2. Institute for Healthcare Improvement. Ask Me 3 Brochure, <https://www.ihl.org/resources/Pages/Tools/Ask-Me-3-Good-Questions-for-Your-Good-Health.aspx> (undated).
3. Cohen S, Kamarck T and Mermelstein R. A global measure of perceived stress. *Journal of Health and Social Behavior* 1983; 24: 385-396.