



Universiteit
Leiden
The Netherlands

Evaluating the effectiveness of innovative psychological intervention tools in optimizing health outcomes: A multimethod approach

Schakel, L.

Citation

Schakel, L. (2019, September 10). *Evaluating the effectiveness of innovative psychological intervention tools in optimizing health outcomes: A multimethod approach*. Retrieved from <https://hdl.handle.net/1887/77746>

Version: Not Applicable (or Unknown)

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/77746>

Note: To cite this publication please use the final published version (if applicable).

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/77746> holds various files of this Leiden University dissertation.

Author: Schakel, L.

Title: Evaluating the effectiveness of innovative psychological intervention tools in optimizing health outcomes: A multimethod approach

Issue Date: 2019-09-10

**Evaluating the effectiveness of innovative psychological
intervention tools in optimizing health outcomes:
A multimethod approach**

Lemmy Schakel

Author: Lemmy Schakel
Cover design: Jord de Wilde
Layout: Nikki Vermeulen - Ridderprint
Printing: Ridderprint - www.ridderprint.nl

© Copyright Lemmy Schakel, 2019

All rights reserved. No part of this thesis may be reproduced or transmitted in any form or by any means without written permission from the author.

The research presented in this thesis was carried out at the Health, Medical and Neuropsychology Unit of Leiden University, Leiden. The research was part of the Leiden Institute for Brain and Cognition (LIBC), the Leiden University Graduate School of Social and Behavioral Sciences, and the Dutch Flemish Postgraduate school for research and education in Experimental Psychopathology (EPP).

The research was funded by a Consolidator Grant from the European Research Council (ERC), granted to A. W. M. Evers. The authors report no conflicts of interest.

**Evaluating the effectiveness of innovative psychological
intervention tools in optimizing health outcomes:
A multimethod approach**

Proefschrift

Ter verkrijging van
de graad van Doctor aan de Universiteit Leiden,
op gezag van Rector Magnificus Prof. Mr. C.J.J.M. Stolker,
volgens besluit van het College voor Promoties
te verdedigen op 10 september 2019
klokke 16.15 uur

door

Lemmy Schakel

geboren te Gorinchem
in 1992

Promotoren

Prof. Dr. A.W.M. Evers

Prof. Dr. T.H.M. Ottenhoff, Leiden Universitair Medisch Centrum

Copromotor

Dr. D.S. Veldhuijzen

Promotiecommissie

Prof. Dr. B.M. Elzinga

Prof. Dr. O.C. Meijer, Leiden Universitair Medisch Centrum

Prof. Dr. W.J. Kop, Universiteit van Tilburg

Contents

Chapter 1	General introduction	7
Chapter 2	Optimizing self-reported healthy food preferences by serious gaming	17
Chapter 3	The effects of a gamified approach avoidance training and verbal suggestions on food outcomes	39
Chapter 4	Can verbal suggestions strengthen the effects of relaxation?	59
Chapter 5	Effectiveness of stress-reducing interventions on response to challenges to the immune system: A meta-analytic review	79
Chapter 6	An e-health psychological intervention to optimize health outcomes in response to immunological and psychosocial challenges: a randomized controlled trial	129
Chapter 7	Optimizing health outcomes in response to immune-related and psychosocial challenges by an e-health psychological intervention: a randomized controlled trial	145
Chapter 8	General discussion	175
	Summary	193
	Dutch Summary (Nederlandse Samenvatting)	199
	References	204
	List of Publications	228
	Curriculum Vitae	229
	Acknowledgements (Dankwoord)	230

