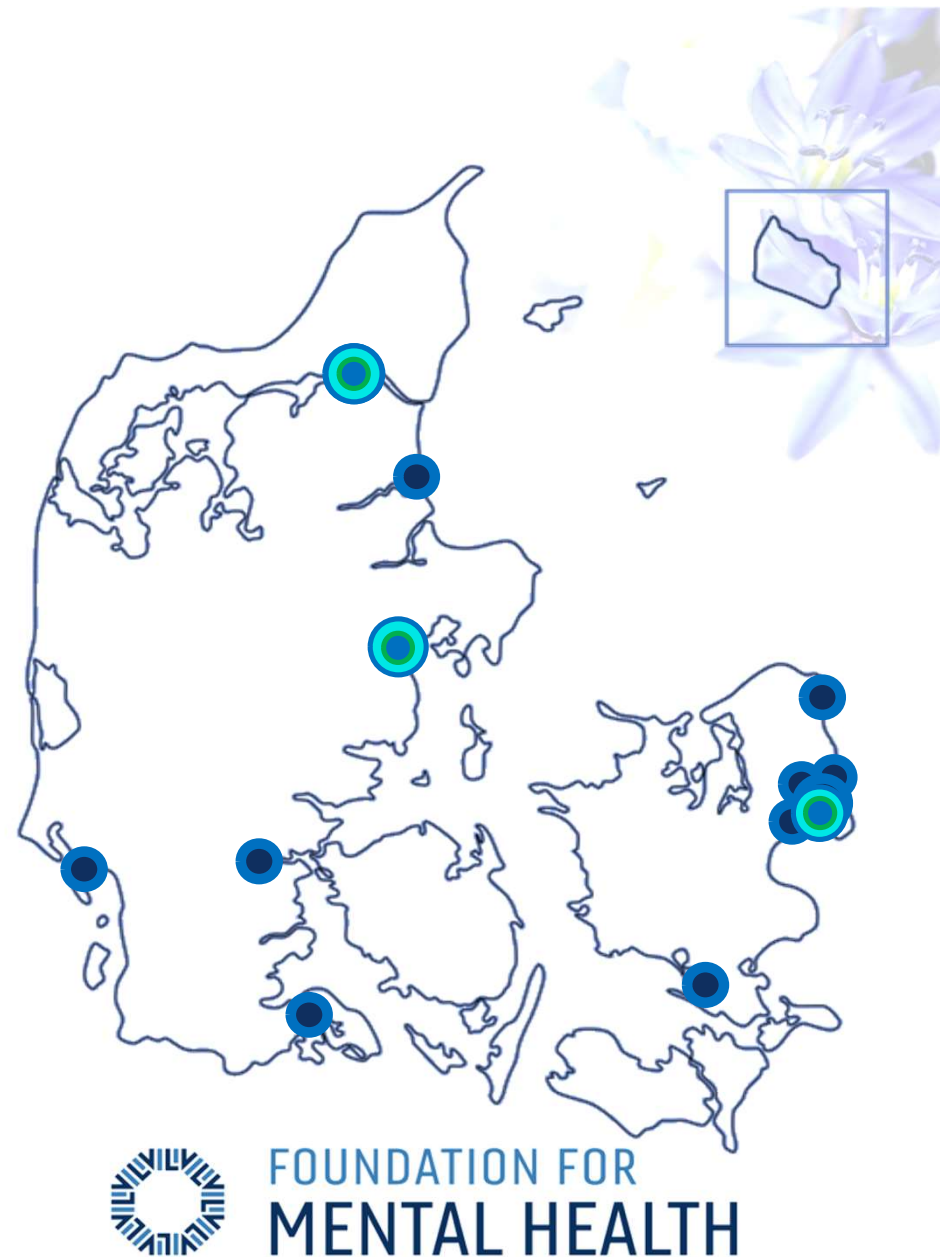




## Evidence-based Public Stress Reduction Programs in Denmark *The Open and Calm Model*

Christian Gaden Jensen  
Ph.d., Co-founder & Director  
Foundation for Mental Health  
[www.fondenmentalsundhed.dk](http://www.fondenmentalsundhed.dk)  
[cgj@fondenmentalsundhed.dk](mailto:cgj@fondenmentalsundhed.dk)





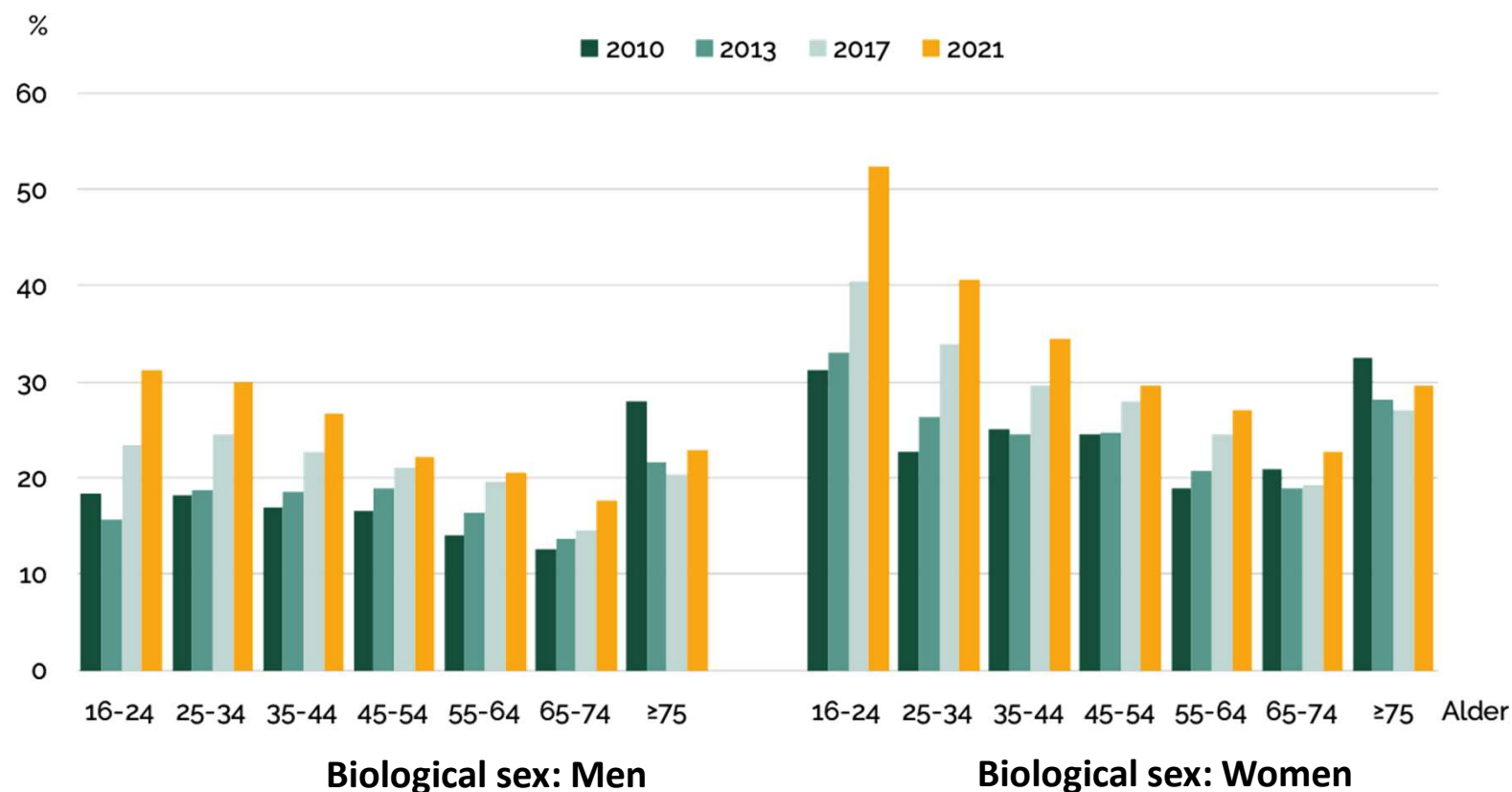
FOUNDATION FOR  
MENTAL HEALTH

## In sum

- The Foundation for Mental Health is a non-profit org. based in Denmark
- We have established effective public mental health centers for 15 years
- We collaborate with major universities to integrate research and practice
- Our stress-initiative (Open and Calm) is recommended by the Danish Med. & Health Authorities and won the Municipal Preventive Price, 2022.
  - (The "Open and Calm" approach: DMHA, 2018, p. 22; DMHA, 2022, p. 125)
- The municipal centres have helped more than 15,000 stressed citizens, adults and adolescents
- We would love to help in more countries to establish public initiatives

## Stress in Danmark 2010-2021

Percentage of the Danish population with a high stressscore (Cohen's Perceived Stress Scale > 17)  
(Danish Medicine and Health Authorities, 2022).

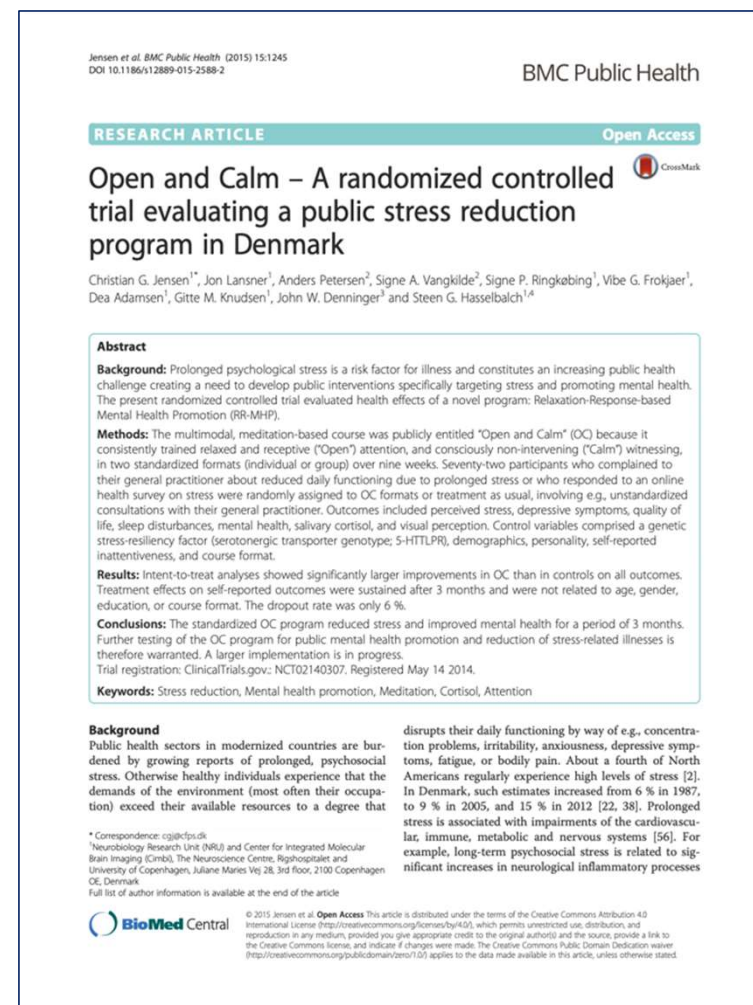


30% increase in the number of citizens treated for a psychiatric disease during the last 10 years in Denmark

Year	N
2010	14.183
2013	149.846
2017	168.802
2021	170.979

# The OC initiative (est. 2009)

- Collaboration between Harvard University (Benson-Henry Institute) and Copenhagen University (Neurobiology Research Unit)
- Specific development for Danish public health care centers
  - Broad socioeconomic groups
  - Many types of "stress" (health-related, work-related, family-related, being marginalized, being unemployed...)



Park et al., 2013; The Development of a Patient-Centered Program Based on the Relaxation Response: The Relaxation Response Resiliency Program (3RP). *Psychosomatics* 2013;54:165–174



**External  
Supplier Agreement  
on a Program**



**Internal  
Municipal Center  
For Mental Health**



**Three collaborative models**



allison davis

# The model

# Our Approach

- A integrative theory of central common factors in stress treatment
- A model with four Strategies
  - Open Attention; Calm Processing; Conscious Participation; Personal Understanding
- Bio-Psycho-Social Approach
- Multi-laterality (groups + individual sessions + technology)
- Methodological education of staff



**Open Attention**

**Personal Understanding**

**Calm Processing**

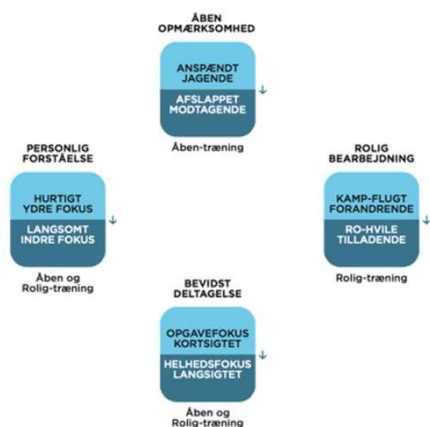
**Conscious Participation**



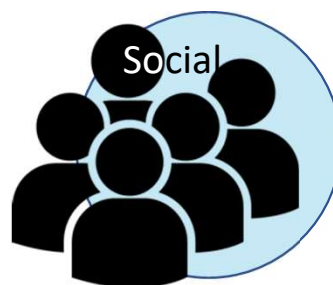
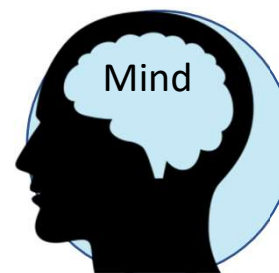
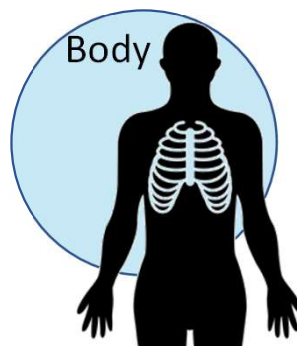




# The Open and Calm MODEL



Krop



## Thematic Structure

Week 1

Week 2

Week 3

Week 4

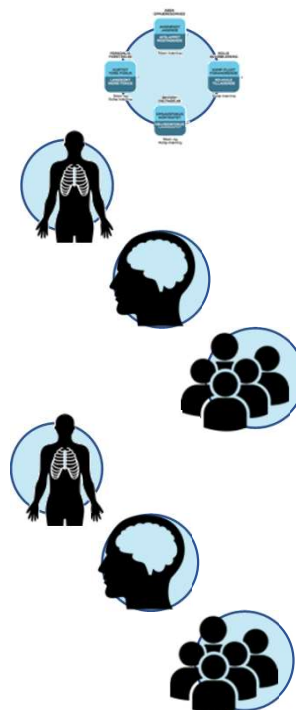
Week 5

Week 6

Week 7

Week 8

Week 9



Personal focus

Personal focus



# Open and Calm Stepped Care



FOUNDATION FOR  
MENTAL HEALTH



City of  
Aalborg



Copenhagen  
Municipality



ÅBEN OG ROLIG

9-WEEKS

## Step 3

**Open and Calm 4 weeks**

9 group sessions + 2 individual sess.  
Severe stress, certified psychologists  
Back-to-work-program can be added



x 9



x 2



ÅBEN OG ROLIG

5 WEEKS

## Step 2

**Open and Calm 5 weeks**

Medium intensity, 5 weeks of 2,5 hrs.  
Blended Care: 5 live group webinars and 1-2 face-to-face sessions



x 5



x 1-2



ÅBEN OG ROLIG

ONLINE

## Step 1

**Open and Calm Online**

20 sessioner. Unlimited Scale

Can be combined with face-to-face sessions or live-online group sessions



## HIERARCHICAL STEPPED CARE



ÅBEN OG ROLIG

LONG PROGRAM

90%



ÅBEN OG ROLIG

MEDIUM PROGRAM



ÅBEN OG ROLIG

ONLINE PROGRAM



ÅBEN OG ROLIG

FREE APP

**LARGE MUNICIPALITIES**

## HIERARCHICAL STEPPED CARE

### SMALL MUNICIPALITIES



ÅBEN OG ROLIG

LONG PROGRAM



ÅBEN OG ROLIG

MEDIUM PROGRAM

100%



ÅBEN OG ROLIG

ONLINE PROGRAM



ÅBEN OG ROLIG

FREE APP

# HIERARCHICAL STEPPED CARE



ÅBEN OG ROLIG

LONG PROGRAM



ÅBEN OG ROLIG

MEDIUM PROGRAM



ÅBEN OG ROLIG

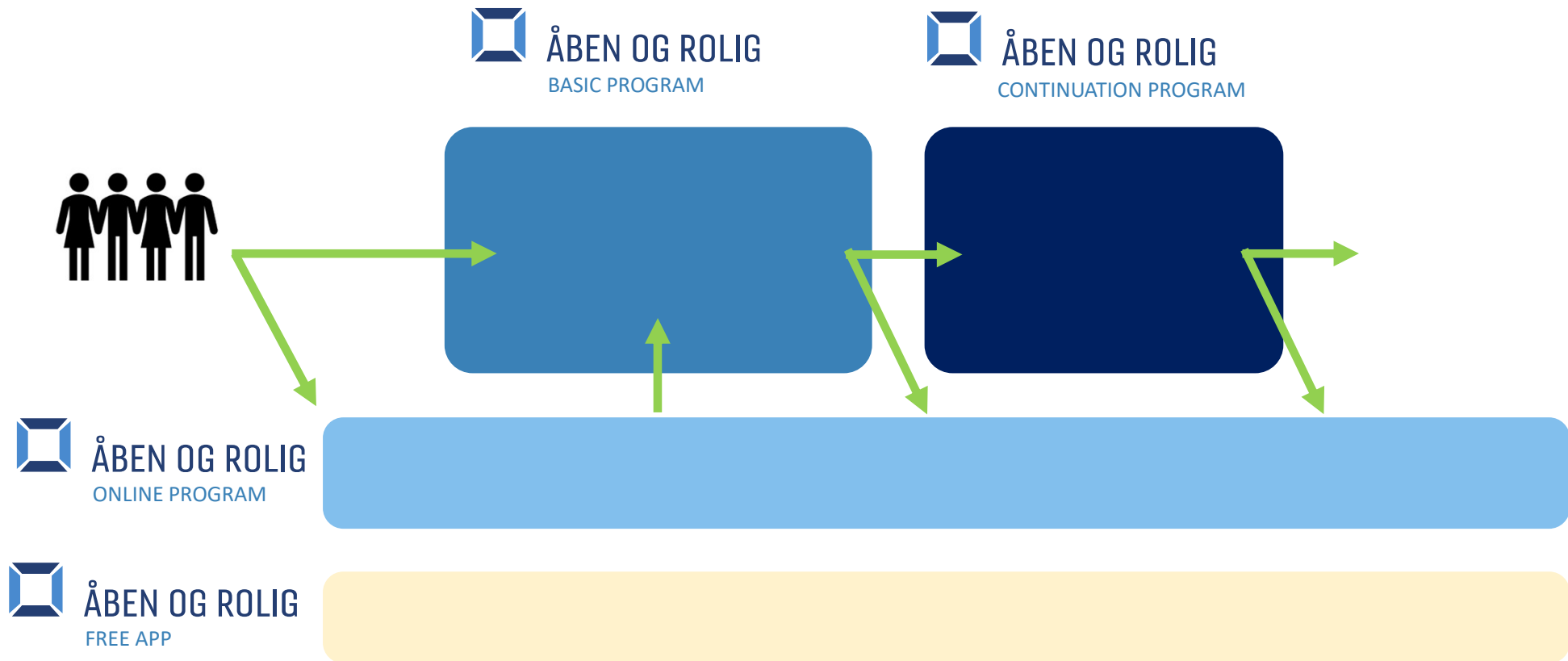
ONLINE PROGRAM



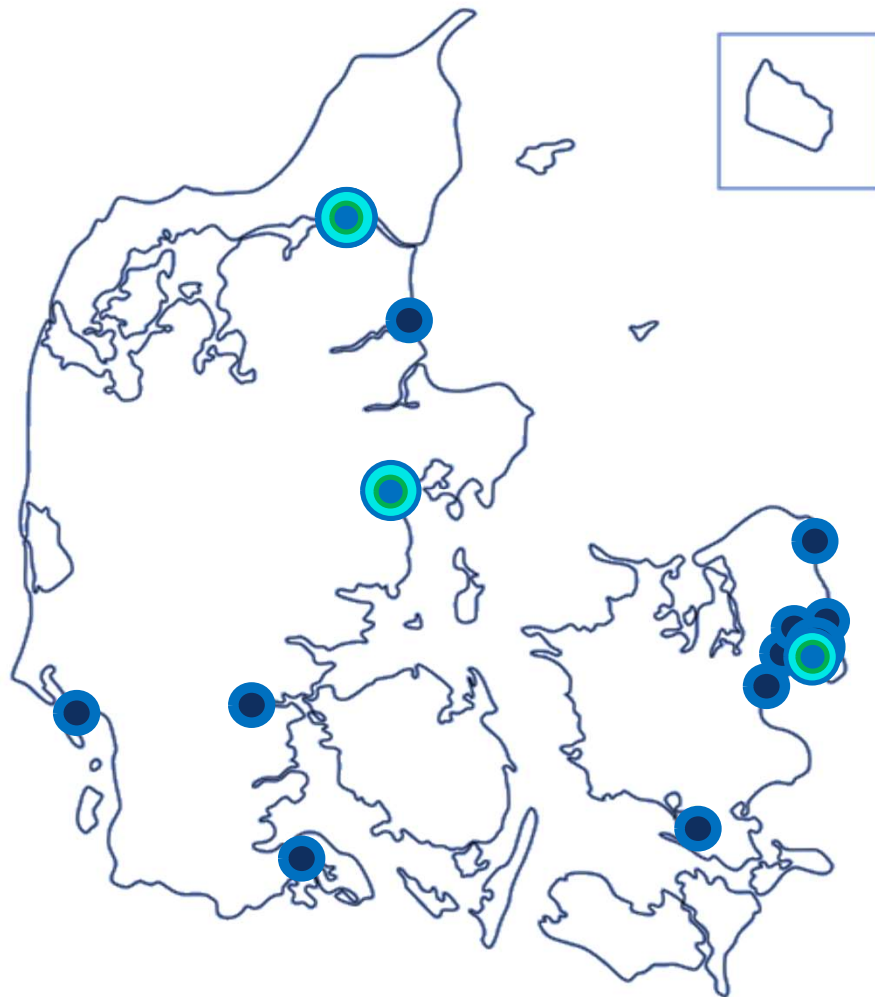
ÅBEN OG ROLIG

FREE APP

# PROGRESSIVE STEPPED CARE



# THE FIRST 20 EVALUATIONS



FONDEN  
MENTAL SUNDHED

## Åben og Rolig-programmet

Forskningsbaseret stressreduktion

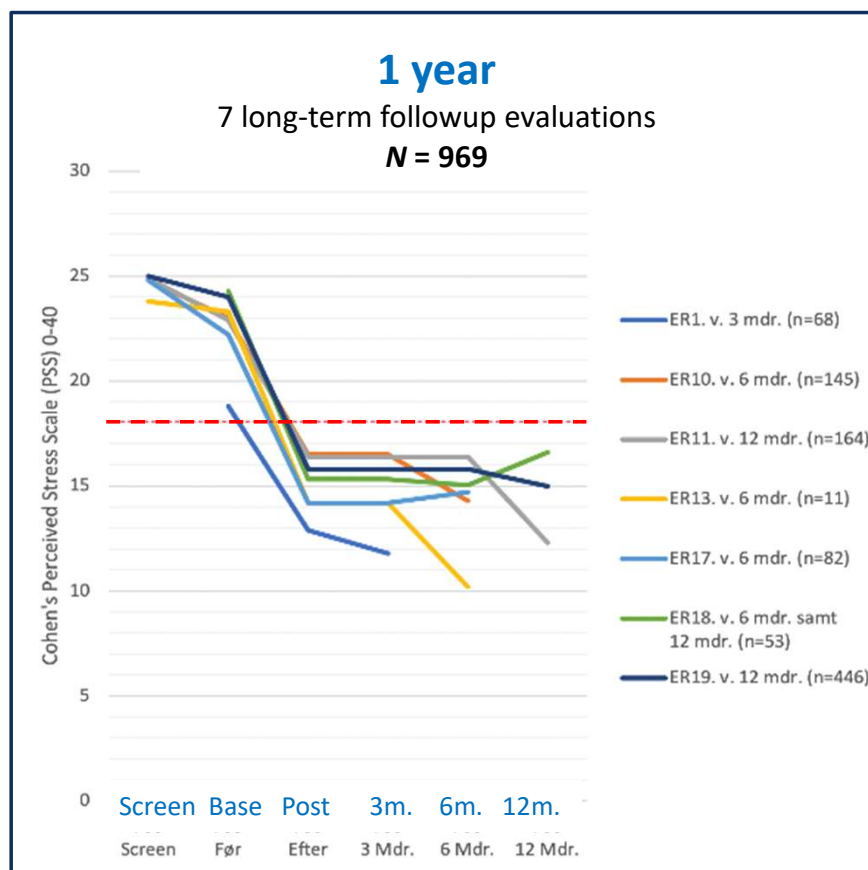
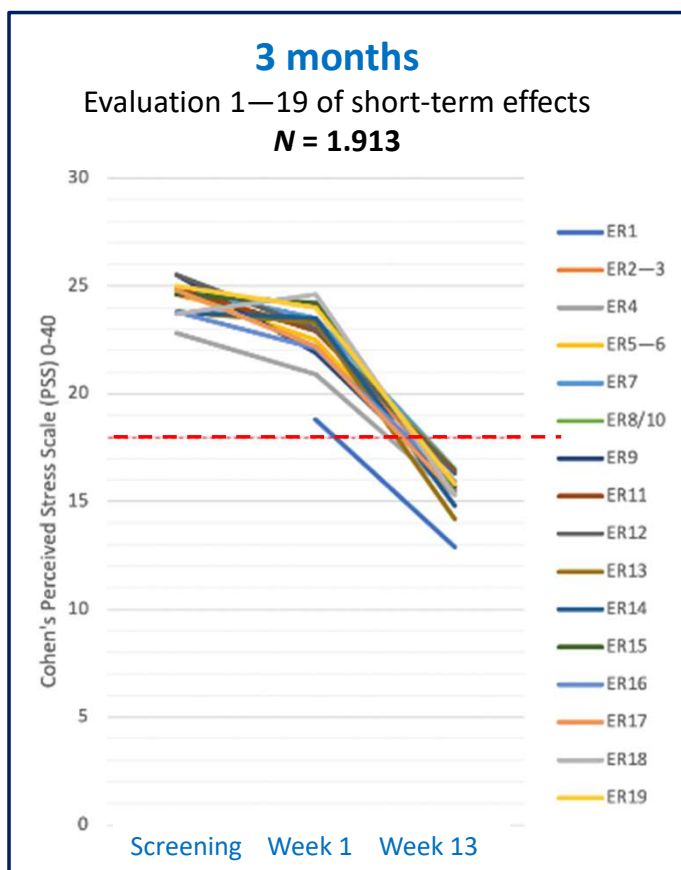
Samlet opgørelse af 20 evalueringer af stress, mental sundhed og beskæftigelse



## FINDINGS 2015-2023



# Changes in Perceived Stress

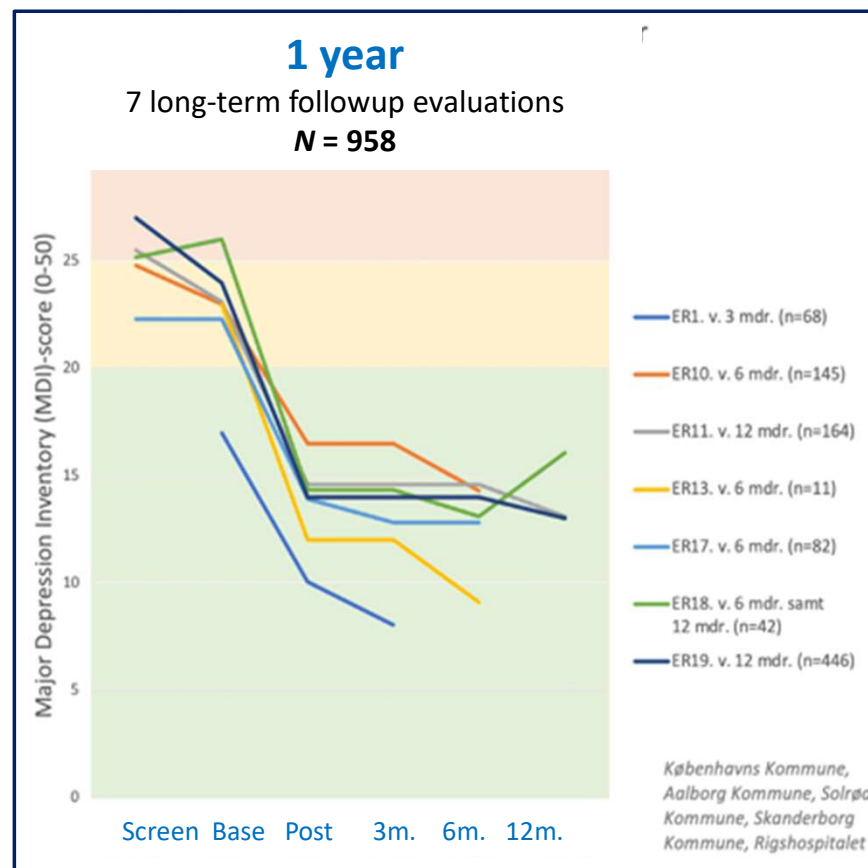
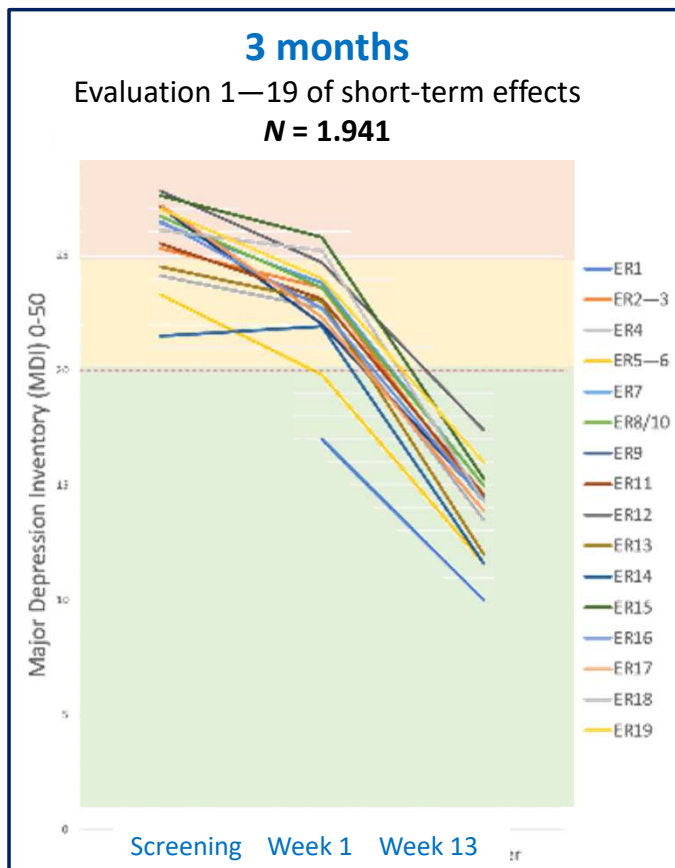


19 short term evaluations  
7 long-term evaluations

Stress measured with Cohen's  
Perceived Stress Scale (Cohen &  
Williamson, 1988; Danish version)

-----  
Danish Medicine and Health  
Authorities' cut-off criterion for  
"high stress" (PSS > 17)

# Symptoms of depression



19 short term evaluations  
7 long-term evaluations

Symptoms of depression  
measured with Major Depression  
Inventory (Bech et al., 2001;  
Olsen et al., 2003)

Severe symptoms

Moderate symptoms

No symptoms of depr.

## Effect sizes on stress (Cohen's Perceived Stress Scale) and symptoms of depression (Major Depression Inventory)

Tabel 2. Evalueringer af forandringer i stressgrad i løbet af Åben og Rolig

Evalueringsrapport	PSS Screen (M)	PSS Før (M)	PSS Efter (M)	PSS % Fald Før-efter	PSS d Før-efter
ER1. Region H.	—	18,8	12,9	31%	0,92***
ER2-3. Københavns Kommune	24,6	23,0	15,9	31%	1,37***
ER4. Aalborg Kommune	22,8	20,9	15,3	27%	1,13***
ER5-6. Aalborg Kommune	24,7	22,5	15,5	31%	1,11***
ER7. Københavns Kommune	24,9	23,5	16,5	30%	1,22***
ER8/10. Københavns Kommune	24,8	23,0	16,5	28%	—
ER9. Aalborg Kommune	25,5	21,9	15,7	28%	0,98***
ER11. Københavns Kommune	24,9	22,9	16,4	28%	—
ER12. Aalborg Universitet	25,5	23,0	16,3	29%	1,23***
ER13. Skanderborg Kommune	23,8	23,3	14,2	37%	1,80***
ER14. Storkøbenhavn, Sjælland	23,8	23,5	14,8	37%	1,49***
ER15. Københavns Kommune	24,6	24,2	15,5	28%	—
ER16. Mariagerfjord Kommune	23,8	22,1	15,9	28%	1,12***
ER17. Aalborg Kommune	24,8	22,2	15,4	31%	1,17***
ER18. Solrød Kommune	23,7	24,6	15,3	37%	1,90***
ER19. Københavns Kommune	25,0	24,0	15,8	34%	—

Noter. Samlet  $N \approx 1.913$ , men ikke alle rapporter oplyser før-efter besvarelser præcist. Estimat af svarprocent er således omtrent 54% ud af  $N \approx 3.534$  PSS-førmålinger og 38% ift. omtrent  $N \approx 5.052$  inkluderede. PSS=Perceived Stress Scale (M)=Mean (gennemsnit). d = Cohen's d (effektstørrelse)

\*\*\*. p-værdi < 0.001 (angiver sandsynligheden for tilfældige fund, Bonferroni-Holm-korrigeret).

Tabel 3. Forandringer i tegn på depression i løbet af Åben og Rolig

Rapport	MDI Screen (M)	MDI Før (M)	MDI Efter (M)	MDI % Fald Før-efter	MDI d Før-efter
ER1. Region H.	—	17,0	10,0	41%	0,91***
ER2-3. Københavns Kommune	25,3	23,6	14,3	40%	1,19***
ER4. Aalborg Kommune	24,1	22,7	13,5	40%	1,16***
ER5-6. Aalborg Kommune	23,3	19,8	11,6	41%	1,09***
ER7. Københavns Kommune	26,4	23,8	15,0	37%	1,05***
ER8/10. Københavns Kommune	26,7	23,6	15,0	36%	—
ER9. Aalborg Kommune	27,1	22,0	14,4	36%	0,88***
ER11. Københavns Kommune	25,5	23,1	14,6	43%	—
ER12. Aalborg Universitet	27,8	24,7	17,4	30%	0,95***
ER13. Skanderborg Kommune	24,5	23,0	12,0	48%	1,58***
ER14. Storkøbenhavn, Sjælland	21,5	21,9	11,6	47%	1,28***
ER15. Københavns Kommune	27,6	25,8	15,3	41%	—
ER16. Mariagerfjord Kommune	26,5	22,7	14,3	37%	0,92***
ER17. Aalborg Kommune	27,2	22,3	13,9	38%	1,55***
ER18. Solrød Kommune	26,1	25,2	14,3	43%	1,77***
ER19. Københavns Kommune	27,0	24,0	16,0	33%	—

Noter. Samlet  $N \approx 1.941$ , men ikke alle rapporter oplyser før-efter besvarelser præcist. Estimat af svarprocent er således omtrent 54% ud af  $N \approx 3.534$  PSS-førmålinger og 38% ift. omtrent  $N \approx 5.052$  inkluderede. MDI=Major Depression Inventory. (M)=Mean (gennemsnit). d = Cohen's d (effektstørrelse)

\*\*\*. p-værdi < 0.001 (angiver sandsynligheden for tilfældige fund, Bonferroni-Holm-korrigeret).

# Evaluation Report on Open and Calm for Adolescents

Aalborg Municipality, 2022 (47 groups,  $N = 397$ )



	Baseline (M)	Post-treat. (M)	Improvem. %	Cohen's $d$
Sleep Quality (PSQI)	10,8	7,7	28,5%	0.90***
Stress (PSS)	25,4	19,0	25,2%	1.00***
Depression (MDI)	26,2	18,3	30,2%	0.91***
Qalti of Life (WHO-5)	32,8	46,6	42,1%	0.93***
Physical H. (SF12)	51,3	52,6	2,4%	0.14
Mental Health (SF12)	28,4-	37,5	32,0%	0.91***

# Occupational effects

## Five register-based reports ( $N=3.284$ )

Objective data drawn 3-4 months after the OC-program

- **74% reduction in the number of citizens on sick leave**
- **86% still employed among citizens employed at baseline**
- **OC saves the nation 8 days on sick-leave within six months from recruitment**
  - National comparison of days on sick leave among working OC participants ( $n=1.000$ ) vs. a specifically matched-to-sample control group;  $n=1.000$ )



Mikkel Munksgaard, Postdoc  
Copenhagen Business School



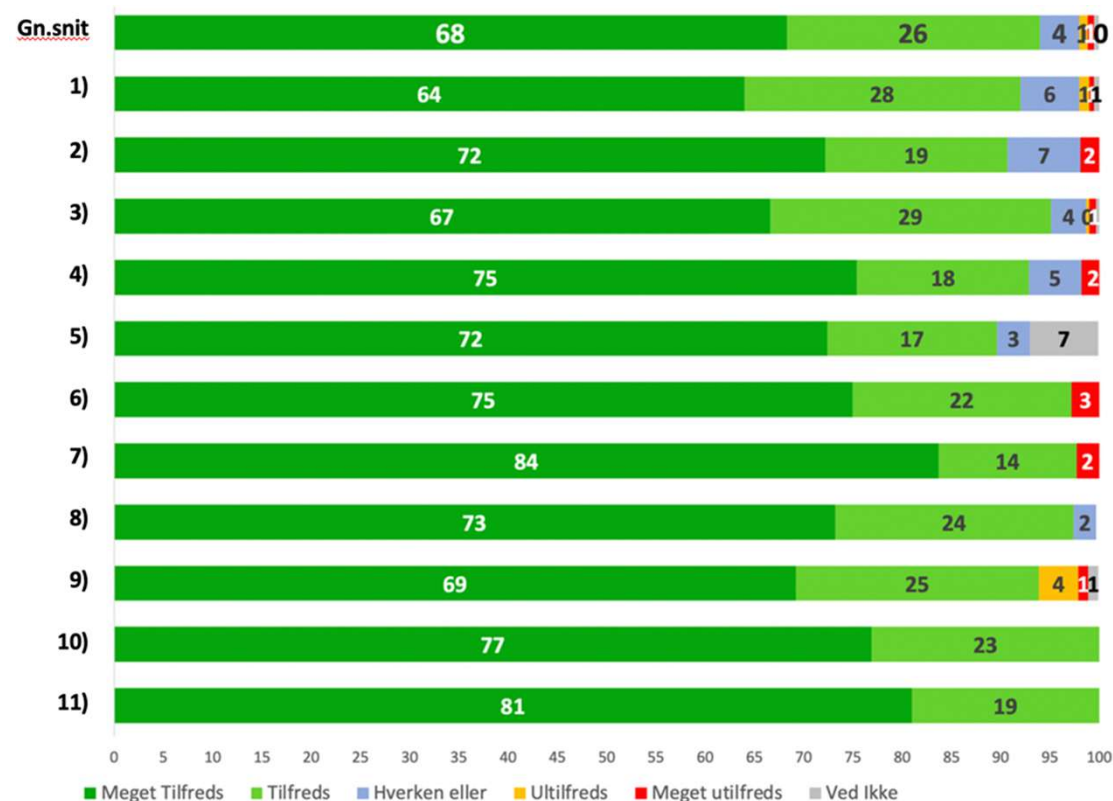
Jacob Pedersen, Ass. Prof., senior researcher  
National Research Centre for the Working Environment



# Satisfaction surveys

11 surveys, N = 2.151

- 94% are satisfied with the public O&C program "All in all"
  - *Very Satisfied* (68%)
  - *Satisfied* (26%)
- Only 1% are not satisfied
  - 0,5% are *Unsatisfied*
  - 0,6% *Very Unsatisfied*



Fonden Mental Sundhed (2021). Åben og Rolig-programmet. Mental Sundhed og Stressreduktion. Samlet opgørelse af evalueringer, 2015-2020. Ved Jensen, C.G., Tybjerg-Jepesen, A., Krogh, S. C., & Ladegaard, Y.



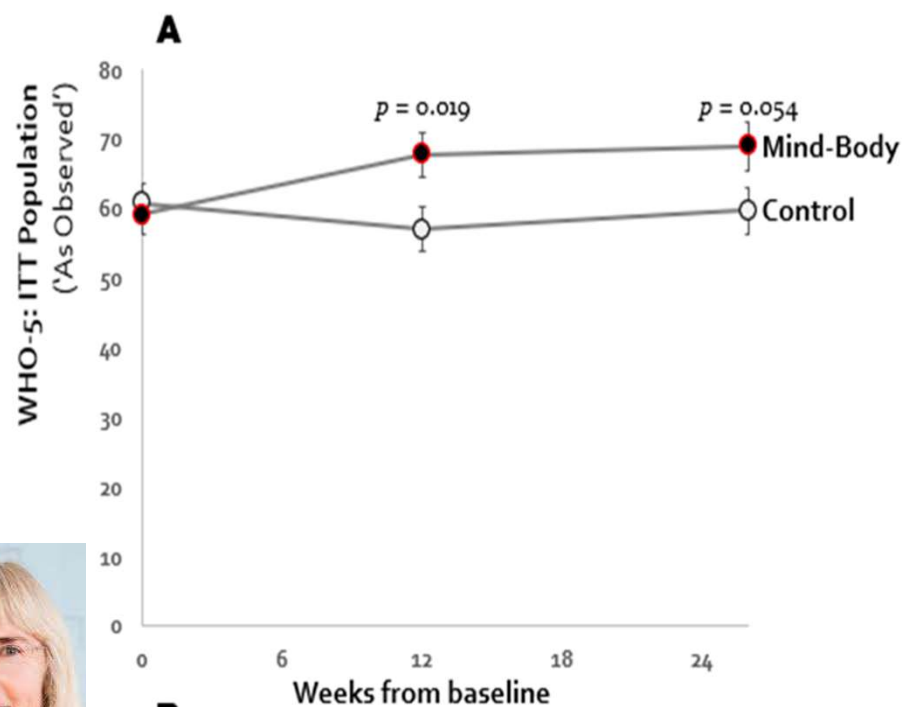
FOUNDATION FOR  
MENTAL HEALTH

REGION

Gentofte  
Hospital

# Mind-Bd.Lf. Inflammatory Conditions

Differences in WHO-5 scores during the trial



Prof. Lone Skov

Journal of  
Clinical Medicine



Article

## Effectiveness of Mind-Body Intervention for Inflammatory Conditions: Results from a 26-Week Randomized, Non-Blinded, Parallel-Group Trial

Thao Thi Nguyen <sup>1,2,3</sup>, Christian G. Jensen <sup>4</sup>, Lina Khoury <sup>3</sup>, Bent Deleuran <sup>5</sup>, Esther S. Blom <sup>4</sup>, Thomas Breinholt <sup>6</sup>, Robin Christensen <sup>2,7</sup> and Lone Skov <sup>3,\*</sup>

- <sup>1</sup> Unit of Social Medicine, Frederiksberg Hospital, 2000 Frederiksberg, Denmark; bich.thao.nguyen@regionh.dk
- <sup>2</sup> Section for Biostatistics and Evidence-Based Research, The Parker Institute, Bispebjerg and Frederiksberg Hospital, 2000 Frederiksberg, Denmark; robin.christensen@regionh.dk
- <sup>3</sup> Department of Dermatology and Allergy, Herlev and Gentofte Hospital, University of Copenhagen, 2900 Hellerup, Denmark; lkhoury@bholmail.com
- <sup>4</sup> Department of Psychology, University of Copenhagen, 1165 Copenhagen, Denmark; cg@fondemtaalsundhed.dk (C.G.); esorgendrei@gmail.com (E.S.B.)
- <sup>5</sup> Department of Rheumatology, Aarhus University Hospital, 8200 Aarhus, Denmark; bd@biomed.au.dk
- <sup>6</sup> TV 2 DANMARK A/S, Rugaardvej 25, 5100 Odense, Denmark; threthv2.dk
- <sup>7</sup> Research Unit of Rheumatology, Department of Clinical Research, Odense University Hospital, University of Southern Denmark, 5000 Odense, Denmark



**Citation:** Nguyen, T.T.; Jensen, C.G.; Khoury, L.; Deleuran, B.; Blom, E.S.; Breinholt, T.; Christensen, R.; Skov, L. Effectiveness of Mind-Body Intervention for Inflammatory Conditions: Results from a 26-Week Randomized, Non-Blinded, Parallel-Group Trial. *J. Clin. Med.* **2021**, *10*, 3107. <https://doi.org/10.3390/jcm10143107>

Academic Editor: Ferdinando Nicolotti

Received: 24 May 2021  
Accepted: 5 July 2021  
Published: 14 July 2021

**Publisher's Note:** MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



**Copyright:** © 2021 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

**Abstract:** Biopsychosocial intervention has been suggested as a complementary treatment strategy for patients with chronic conditions. We compared the effect of a mind-body intervention (MBI), relative to treatment-as-usual (TAU) on WHO-5 Well-Being Index during an intensive period of 12 weeks and follow-up at week 26 among patients with either psoriasis (PsO) or rheumatoid arthritis (RA). The MBI was based on the 'Relaxation Response Resiliency Program' and the 'Open and Calm Program', as well as 'Mindfulness Based Stress Reduction' (MBSR). The trial was randomized, management-as-usual, and controlled. Statistical analyses were based on the intention-to-treat population using repeated measures and mixed effects models (NCT03888261). We screened 39 potential participants, 35 of which (PsO,  $n = 20$ ; RA,  $n = 15$ ) met the eligibility criteria and were randomized: 17 in the MBI group and 18 in the TAU group. Attrition from the intervention program was 19%, with 65% of MBI patients and 71% of TAU patients completing the outcome assessments. After 12 weeks, a statistically significant difference in WHO-5 was observed between the groups ( $p = 0.019$ ). However, according to the protocol, during the entire trial period, the average (least squares mean values) WHO-5 score was higher although not statistically significant in the MBI group (65.3) compared with the TAU group (59.1), corresponding to a between-group difference over 26 weeks of 6.15 (95% CI: −0.26 to 12.56;  $p = 0.060$ ). All things considered, adding biopsychosocial intervention to clinical practice to patients with conditions, such as PsO and RA, could potentially improve health-related quality of life.

**Keywords:** biopsychosocial; mind-body intervention; treatment-as-usual; psoriasis; rheumatoid arthritis; health-related quality of life


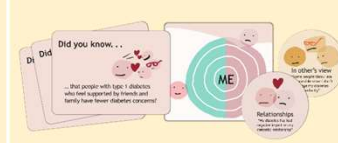
### 1. Introduction

Chronic diseases are the most costly health conditions worldwide [1,2]. In addition, complex psychosocial factors such as depression, stress, work-related dynamics, and thinking patterns are thought to be associated with poor health status and impaired health-related quality of life (HR-QoL) among patients suffering from chronic inflammatory conditions such as psoriasis (PsO) and rheumatoid arthritis (RA) [3,4]. Currently, treatment of PsO and RA is primarily pharmacological with topical treatment being applied to



# REDUCE. Diabetes Distress Mngmt.

## • IM-EST Model coupled with REDEEM

Management distress		
<p><b>“Worries about my blood glucose”</b> <i>Addressing the impact of blood sugar levels on daily life and facilitating discussions of strategies to overcome worries.</i></p>	<p>One sheet with statements capturing the daily frustrations associated with blood glucose fluctuations. Another sheet contains reflective questions designed to inspire new ideas to manage frustrations related to blood glucose fluctuations in everyday life.</p>	<p>Examples of everyday worries about measuring blood sugar Often = RED Some of the time = ORANGE Never or almost never = BLUE</p> <ol style="list-style-type: none"> <li>1. I blame myself for not doing enough when my blood sugar is too low or too high.</li> <li>2. I am afraid to leave my home if I do not feel like my blood sugar is under control</li> </ol>
<ul style="list-style-type: none"> <li>Improves understanding of worries related to blood glucose contributing to a sense of validation and awareness.</li> </ul>		
Hypoglycaemia distress		
<p><b>“Worries about low blood glucose”</b> <i>Address how concerns about low blood glucose impact everyday life and explore strategies for managing worries.</i></p>	<p>A set of 23 cards containing illustrations and statements capturing various concerns about low blood glucose. The cards involve sorting the statement into three distinct piles, ‘Agree’, ‘Maybe’ and ‘Disagree’. Questions are included to prompt peer discussion about new ideas to manage concerns.</p>	
<ul style="list-style-type: none"> <li>Improves understanding of challenges related to low blood glucose, which contribute to a sense of validation, clarity, and reduction in shame and isolation.</li> </ul>		
Friends/family distress and negative social perceptions		
<p><b>“Friends and family support”</b> <i>Discuss frustrations about social relations and develop strategies for managing social challenges.</i></p>	<p>A set of 24 cards containing illustrations and statements capturing friends/family distress as well as frustrations related to negative social perceptions about diabetes. The cards involve sorting the statement into three distinct piles, ‘Agree’, ‘Maybe’ and ‘Disagree’. Five cards: ‘Did you know?’ - about social relations with facts about the impact of social relations and stigma in adults with type 1 diabetes. One question sheet with open-ended questions to promote emotion regulation skills.</p>	
<ul style="list-style-type: none"> <li>Improves understanding of challenges related to social support and negative judgments from others about diabetes is common and normal, contributing to a sense of validation.</li> <li>Motivate participants to clarify resources that can provide social support which can alleviate feelings of isolation.</li> <li>Provide questions to encourage participants to reflect on the emotional support they receive and need from their social relationships.</li> <li>Foster open discussion of stigma experiences linked to diabetes, which can de-stigmatise and alleviate feelings of shame, guilt, and isolation.</li> <li>Reduce self-stigma, which can enhance self-perception and greater self-compassion and improve overall quality of life.</li> </ul>		

Development of an evidence-based nurse-led intervention to reduce diabetes distress among adults with type 1 diabetes and diabetes distress (REDUCE)

Vibeke Stenov<sup>1</sup>, Bryan Cleal<sup>1</sup>, Ingrid Willaing<sup>1,2</sup>, Jette Normann Christensen, Christian Gaden Jensen<sup>4</sup>, Julie Drotner Mouritsen<sup>5</sup>, Mette Due-Christensen<sup>1,6</sup>

<sup>1</sup> Department of Prevention, Health Promotion and Community Care, Copenhagen University Hospital – Steno Diabetes Center, Copenhagen, Herlev, Denmark

<sup>2</sup> Section of Health Services Research, Department of Public Health, Copenhagen University, Copenhagen, Denmark

<sup>3</sup> Department of Diabetes Care, Copenhagen University Hospital – Steno Diabetes Center Copenhagen, Herlev, Denmark

<sup>4</sup> Foundation for Mental Health and Cognitive Neuroscience Research Unit, Aarhus University

<sup>5</sup> Steno Diabetes Center Odense, Odense University Hospital, Odense, Denmark

<sup>6</sup> Florence Nightingale Faculty of Nursing, Midwifery & Palliative Care, King’s College London, United Kingdom



Vibeke Stenov



Some good building blocks

# What did we do right?

- Evidence-based model (3RP) and thorough LOCAL development (EST)
- Systematic piloting, testing, manualization - and implementation
- Competent, engaged clinical staff
- Several types of collaborations (external, internal, social investments)
- We share knowledge and participate in great preventive networks! 😊



Aletta Jacobs  
SCHOOL OF PUBLIC HEALTH

MENTAAL  
GEZOND  
GRONINGEN

umcg

MIND  
US

NATIONAAL PLAN  
HOOFDZAKEN



FOUNDATION FOR  
MENTAL HEALTH

# What did we do right?

---

- Implementation across several administr. sections can be important
- Local political ownership is crucial
- The business case-perspective is important
- Systematic Stepped Care is necessary
- "There are many paths to all places"



Aletta Jacobs  
SCHOOL OF PUBLIC HEALTH

MENTAAL  
GEZOND  
GRONINGEN

umcg

MIND  
US

NATIONAAL PLAN  
HOOFDZAKEN



FOUNDATION FOR  
MENTAL HEALTH



Aletta Jacobs  
SCHOOL OF PUBLIC HEALTH



NATIONAAL PLAN  
HOOFDZAKEN

## Evidence-based Public Stress Reduction Programs in Denmark *The Open and Calm Model*



Christian Gaden Jensen

[cgj@cfps.dk](mailto:cgj@cfps.dk)

Cognitive Neuroscience Research Unit,  
Aarhus University

[www.cnru.dk](http://www.cnru.dk)

Foundation for Mental Health

[www.fondenmentalsundhed.dk](http://www.fondenmentalsundhed.dk)

# THANK YOU!



FOUNDATION FOR  
MENTAL HEALTH

Velliv  
Foreningen



DEN SOCIALE  
INVESTERINGSFOND



15. Juni Fonden



Gentofte  
Hospital



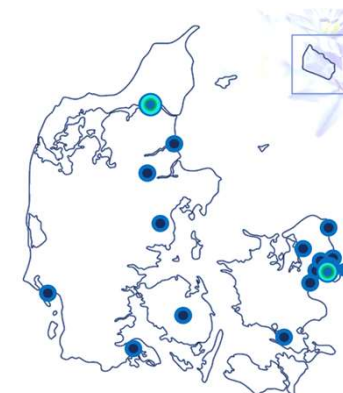
Steno Diabetes Center  
Copenhagen



City of  
Aalborg



Copenhagen  
Municipality

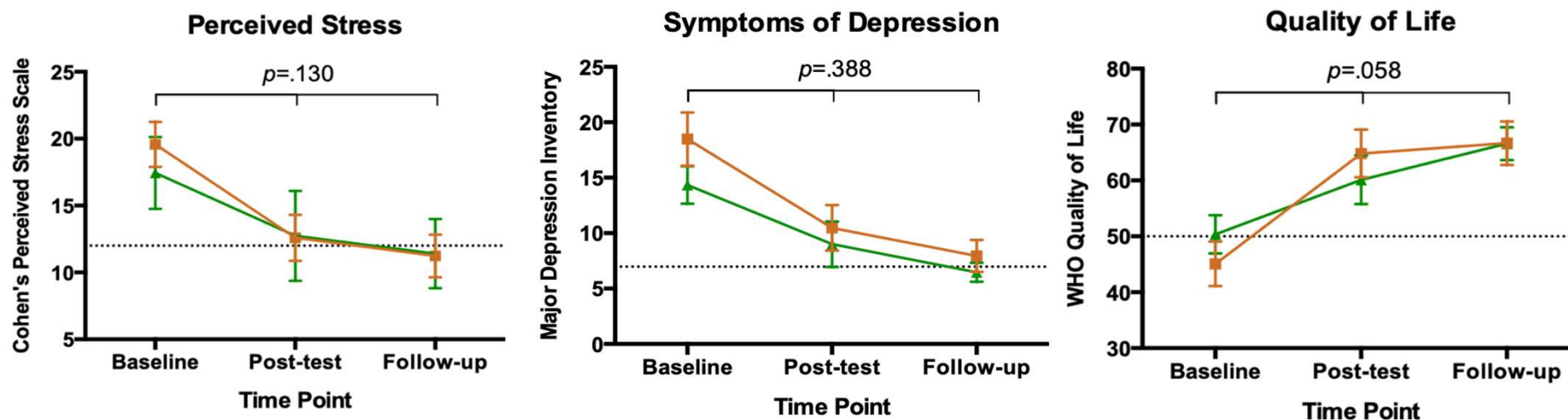


PUBLIC SERVICE FUNDS

# EXTRA SLIDES

# The first RCT

(Jensen et al., 2015; BMS Public Health)



Group-based vs. Individual treatment of stress were equally effective

# Evidence for group-based treatment

- Group-based programs are (often) as effective as individual therapy for many disorders (stress, depression, anxiety, chronic pain, PTSD)
  - [Rosendahl, J., et al., \*The American Journal of Psychotherapy\*, Vol. 74, No. 2, 2021](#)
- Group-based programs can be especially well-suited for people who feel marginalized, discriminated or socially exposed/vulnerable)
  - [Craig, S. L., et al., \*BMC Psychology\*, online, 2021](#)
  - [Research on Social Work Practice, Vol. 32, No. 1, 2022](#)

