Nature Based Interventions in Sweden

-for the rehabilitation and prevention of stress related disorders

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2018-05-08

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Why Nature Based Rehabilitation in Sweden?

Background

• Increase in sick leaves due to stress related mental disorders
• No established rehabilitation models for this patient group
• Limited success with existing methods
• Published research claiming positive health effects of nature exposure
32 listed NBR and their main target groups.

- Stress/ED/Depression, Anxiety: 22
- Long-term unemployment / sick leave: 9
- Unspecified: 1

- Green: Stress/ED/Depression, Anxiety
- Blue: Long-term unemployment / sick leave
- Pink: Unspecified
Distribution of NBRs with or without animals

N=32

Animal: 9
Nature/garden: 23

NBR on farms in southern Sweden
N=8

With animals: 2
Without animals: 6
Nature Based ”green” Rehabilitation

Garden/nature environment
+
A multi disciplinary team
+
Therapeutic activities
Green Rehab
Gotheburg Botanical Garden
Region Västra Götaland

Is it possible to re-start a stalled rehabilitation process using Nature Based Rehabilitation?

AND
to prevent
Green Rehab's various branches of activity

- Rehabilitation 28 weeks x 4 halfdays/week
- Stress management course 12 weeks x 2 afternoons/week
- Manager and HR
- Information about the "Green Rehab model"
Green Rehab: target groups

The Rehabilitation programme:
- Employees in Region Västra Götaland on long sick leaves because of stress related mental disorders
- initially care had not been sufficient

The Stress management courses
- Employees in Region Västra Götaland with escalating stress symptoms
- HR and supervisors
The Rehabilitation-team at Green Rehab

**From the "green" sector**
- Biologist
- Gardener

**From the "white" sector**
- Physiotherapist,
- Psychotherapist
- Occupational therapist
Distribution of activities in the weekly schedule
Green Rehab

- **NATURE** 44%
  - Guided nature walks
  - Walks
  - Garden activities
  - Handicraft in nature materials

- **TRADITIONAL** 34%
  - Guided relaxation
  - Guided (therapeutic) group conversations
  - Art therapy
  - Reflection on the week

- **SOCIAL** 22%
  - Joint start in the morning including coffee/tea
  - Extended break for coffee/tea, chatting
The Green Rehab model

Guided relaxation - Outdoors and indoors

“The birds singing, you feel the sun, the wind - the senses become somehow more alert...”
The Green Rehab model

Art work

Paint a calm and peaceful experience
The Green Rehab model

Supportive conversations—
in group and individual
Guided nature walks

- Stimulating knowledge—"opening of eyes"
- Other focus-distraction
- New interests
- Frequency
- Existential reflections

“If I walk in the forest now, I see, I look at other things now and in a way I’ve never done before.”
One minute nature’s sparkling with beautiful colors and the next it’s molded and died. This makes me reflect a lot about the fact that it may be okay to have a period in your life when you’re in dissonance with yourself and not feeling so good, not having the same strength as before. Because nature’s built that way – one may need to hibernate for a while to bloom again.
Was it possible to re-start a stalled rehabilitation using the Green Rehab modell?

**Self-assessment instruments**
- Burn out
- Depression
- Anxiety
- Well-being

**Register data:**
- Health consumption
- Prescribed sick leave

Start – end-
6 months -12 months

Period 1: 1-6 months before start
Period 2: 1-6 months after 16 weeks at Green Rehab
Period 3: 7-12 months after period 2
Results:

- Burn out
- Depression
- Anxiety
- Well being

- Sick leave
- Health care utilization

Significant improvements

Significant reductions
Depression (Becks Depression Inventory)
## Type of activity after Green Rehab

<table>
<thead>
<tr>
<th>Time of measure</th>
<th>No activity</th>
<th>Work-training</th>
<th>Employment (salary)</th>
<th>Study/internships</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>End GR</strong></td>
<td>3 (7 %)</td>
<td>25 (61 %)</td>
<td>9 (22 %)</td>
<td>1</td>
<td>Labor office activity- 1 Other rehab- 1 Seeking a retirement pension-1</td>
</tr>
<tr>
<td><strong>6 months after GR</strong></td>
<td>3 (7 %)</td>
<td>10 (24 %)</td>
<td>23 (56 %)</td>
<td>2</td>
<td>Labor office activity- 1 Other rehab - 1</td>
</tr>
</tbody>
</table>

- **90 % in activity**
- increased activity rate
The cost of the rehabilitation

<table>
<thead>
<tr>
<th>Length of rehabilitation in weeks (mean)</th>
<th>27</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost/rehabilitated participant</td>
<td>14 500 EUR</td>
</tr>
</tbody>
</table>

The cost is refunded after about 12 months at a monthly salary of 2 000 EUR.
Research questions:
1. Any difference between start and follow ups in
   stress-related symptoms
   sick leave
   work-ability

2. Do participants obtain strategies and tools?
3. How do they experience/evaluate the "green" content?

Method:
• Studypopulation: 33 women
• Inklusion-kriteria: repeated sick leave, "stress-symptoms"
• Measurements: self-assessment instruments at 4 occasions and semi-structured interviews
The Stress-management course-- Results

Burn out symptoms --- decreased
Work-ability --- "good work ability” increased
Sick leave --- long sick leaves decreased
Stress-related symptoms --- decreased

The nature content:
- Stress reduction
- More in nature
- Increased satisfaction in gardening
- Knowledge

Tools and strategies:
- Mindfulness
- Listen to signals from the body
- Limit engagement
- Take breaks
## The stress management course

### Burn out symptoms

*(Shirom Melamed Burn out questionnaire, SMBQ)*

<table>
<thead>
<tr>
<th>SMBQ score</th>
<th>Start</th>
<th>Course end</th>
<th>6-month follow-up</th>
<th>12-month follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=33</td>
<td>N=33</td>
<td>N=33</td>
<td>N=33</td>
<td>N=32</td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>3.82 (1.03)</td>
<td>3.56 (1.06)</td>
<td>3.09 (1.21)</td>
<td>2.93 (1.10)</td>
</tr>
<tr>
<td>Ref.value</td>
<td>2.75</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: The SMBQ score represents the level of burnout symptoms, with lower scores indicating less burnout.*
# Tools and Strategies

<table>
<thead>
<tr>
<th>Use of new tools and strategies</th>
<th>Course end Count (%)</th>
<th>6 months Count (%)</th>
<th>12 months Count (%)</th>
<th>A selection of responses from participants at 12-month follow-up regarding how tools/strategies help in stress management.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of new tools and strategies</td>
<td>N=33</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- yes</td>
<td>33 (100)</td>
<td>31 (94)</td>
<td>31 (94)</td>
<td></td>
</tr>
<tr>
<td>- no</td>
<td>0</td>
<td>2 (6)</td>
<td>2 (6)</td>
<td></td>
</tr>
<tr>
<td>Relaxation/breathing techniques</td>
<td>23 (67)</td>
<td>28 (85)</td>
<td>26 (79)</td>
<td>“I can detect early on when stress takes over – and then withdraw for breathing and mindfulness.” “Focus on breathing and body awareness.”</td>
</tr>
<tr>
<td>Using gardening/nature to handle stress</td>
<td>16 (48)</td>
<td>8 (24)</td>
<td>8 (24)</td>
<td>“Nature walks during leisure.” “When stressed, I watch trees and how their leaves are gently blowing.” “With eyes open, see the small things and details in nature.”</td>
</tr>
<tr>
<td>Say “no”; limiting engagement; taking breaks</td>
<td>16 (48)</td>
<td>16 (48)</td>
<td>20 (61)</td>
<td>“Taking small breaks, daring to say no, letting go of the need to control.” “Listen to signals from my body.”</td>
</tr>
</tbody>
</table>
“What I’ve learned in the program is to recognize when I need a break and that it really isn’t necessary to finish a task first…I believe it’s an enormously important piece of knowledge stemming from the team encouraging us to reflect on the need for breaks and comparing it with nature taking breaks…”

“Yes I’ve gotten a tool that I’ve incorporated: to inhale the fresh and new and to exhale and let go of the old, the wasted. That suited me so well.”
2 other successful models of Nature Based Rehabilitation
NBR- meeting outdoors

Around the fire

Relaxation in hammocks in the woods
NBR Naturkraft ("Power of Nature")
-using different natural areas in the local environment
”Naturkraft”: symptoms/diagnoses among the participants

<table>
<thead>
<tr>
<th>Symptom/diagnosis</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhaustion Disorder</td>
<td>15</td>
</tr>
<tr>
<td>Depression</td>
<td>28</td>
</tr>
<tr>
<td>Anxiety</td>
<td>18</td>
</tr>
<tr>
<td>Exhaustion depression</td>
<td>2</td>
</tr>
<tr>
<td>Post Traumatic Stress Syndrome</td>
<td>2</td>
</tr>
<tr>
<td>Bipolar disorder</td>
<td>6</td>
</tr>
<tr>
<td>Social phobia</td>
<td>3</td>
</tr>
<tr>
<td>Tinnitus</td>
<td>5</td>
</tr>
<tr>
<td>Fibromyalgia</td>
<td>4</td>
</tr>
<tr>
<td>Personality disorder</td>
<td>4</td>
</tr>
</tbody>
</table>

Approx. 75% improved health

73% in diff. types of activity after NBR
”Being in nature or in the garden is not so much about performance but to find yourself a bit. “

THANK YOU!

Foto Raija Hynenen-Svensson