POLYPHARMACY IN ELDERLY IN NURSING HOMES: HOW NURSES CAN CONTRIBUTE TO DEPRESCRIBING MEDICATIONS

KATRIN GILLIS – ODISEE UNIVERSITY COLLEGE – VZW CURANDO
- Introduction
- Curando innovation model
- Residents’ medication use
- Nurses knowledge and attitude towards medication
- Effect of an airbreeze mattress and cushion cover on sleep
- Effect of individual reminiscence for older adults with mild to moderate dementia in nursing homes
- Caring for older people: how can we do the right things right?
INTRODUCTION

- Odisee University College, department of healthcare
  - Talent
  - Structural interaction practice
  - State of the art education
- Vzw Curando
  - Quality of care
  - Person centered care
  - Evidence based care
VZW CURANDO O.L.V.
van 7 Weeën Ruiselede

is een nieuwe organisatie met een lange, boeiende voorgeschiedenis en een duidelijk plan voor de toekomst.

Lees meer over onze organisatie
Elderly care is under pressure.

While an increasing amount of elderly people needs an increasing amount of care, financial resources are still hardly sufficient. This is why vzw Curando and Odisee University College have been searching for evidence based innovations: to be able to continue guaranteeing high-quality care, even during these challenging times. Residents always come first, so that we don’t lose track of our main goals: **improving their quality of care and/or their quality of life.**

Different studies in several Flemish nursing homes have resulted in numerous innovations: the introduction of disposable wash gloves and the supply of more comfortable seat cushions and mattress covers. We are striving to reduce the use of medication and person centered care is our basic principle: to treat each resident not only as a resident, but as a person with needs, likes and dislikes.

**Small changes create great impact.**

**Together we can accomplish greatness.**
CURANDO INNOVATION MODEL
- Grol & Wensing (2006)

- Social interaction model (van der Weide et al., 2004)
Nurses’ knowledge and attitude towards medication

Residents’ medication use
- **Polypharmacy** increases the risk for *more side effects of medications* (82%), falls, hip fractures, hospital admissions and a higher rate of mortality (Hardy & Hilmer, 2012).

- Elderly who take *more than 9 different medications* have 2,3x more risk for inadvertent side effects (Nguyen et al., 2006).

- Residents who take **10 or more medications a day** have a significant higher risk for cardiac stroke, diabetes mellitus, Parkinson disease, gastro-intestinal problems, dyspneu and more hospital admissions (Vetrano et al., 2013).

- Polypharmacy increases the risk for **medication errors** (Petrovic, 2008).

- Polypharmacy increases the **costs** of medication therapy, **costs** of side effects and **costs** of preparation and administering of medication.
Polypharmacy increases the risk for **medication errors** (Petrovic, 2008).

Polypharmacy increases the **costs** of medication therapy, **costs** of side effects and **costs** of preparation and administering of medication.
The aim of this study was to determine nurse-related prescribing patterns of medications in nursing homes and to identify the rate of polypharmacy.
METHODS

- Informed consents general practitioner and resident/legal representative
- Cross-sectional design april 2015
- Medical background was not taken into account
- Database yes/no
- Exclusion of tear drops, vitamins, minerals en supplements
- Classificatie BFCI, 2015
- Exception:
  - Anti-aggregantia (acetylsalicylacide) = cardiovasculair use instaed of pain and fever
  - Tegretol = neuropathic pain instead of anti-epileptic use
DESCRIPTIONS OF THE RESIDENTS N=455 (RR 56%)

- 73% female
- Mean age **85.8 years** (39 – 101)
- Forfait O 6%
- Forfait A 12%
- Forfait B 29%
- Forfait C 15%
- Forfait CD 38%
- General practitioners n =164
- Mean 7.3 (0 - 21) SD 3.7
- **Mean 6.8 (0 - 19)** SD 3.5 without tear drops, vit/minerals en other supplements
- 73% of the residents take 5 or more medications a day = polypharmacy
- 50% of the residents take between 5 and 9 medications a day
USE OF MEDICATIONS IN DIFFERENT NURSING HOMES (P=0.089)
- A total of **407** different designations of medications
- Exclusive **38** different tear drops
- Exclusive **42** different vitamins, minerals and other nutritional supplements
- **487**
  (no different doses taken in account)
USE OF MEDICATIONS (%)

- DIURETICS: 44.2%
- BENZODIAZEPINES + Z: 43.8%
- BETA BLOCKER: 43.8%
- ANTIDEPRESSANTS: 43.8%
- PROTONPOMINHIBITORS: 42.3%
- CHOLESTEROL: 41.8%
- LAXATIVES: 40%
- ANTI-AGGREGANTS: 39.9%
- OSTEOPOROSIS: 33.8%
- VITAMINES MINERALS SUPPL: 32.7%
- PAIN MEDICATIONS: 25.7%
- ANTPSYCHOTICS: 25.3%
- ANTITROMBOTICS: 21.6%
- CALCIUMANTAGONISTS: 19%
- RENINE-ANGIOTENSINEHIBITORS: 16.6%
- TEAR DROPS: 16.6%
- HYPERTENSION: 12.9%
- ASTMA - COPD: 11.3%
- DIABETES: 10%
# Prescribing Pattern Related to Nursing Problems

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diuretics</td>
<td>44.2%</td>
</tr>
<tr>
<td>Beta Blocker</td>
<td>43.8%</td>
</tr>
<tr>
<td>Antidepressants</td>
<td>43.8%</td>
</tr>
<tr>
<td>ProtonPump Inhibitors</td>
<td>42.3%</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>41.8%</td>
</tr>
<tr>
<td>Laxatives</td>
<td>39.9%</td>
</tr>
<tr>
<td>Anti-Aggregants</td>
<td>33.8%</td>
</tr>
<tr>
<td>Osteoporosis</td>
<td>32.7%</td>
</tr>
<tr>
<td>Vitamins Minerals Suppl</td>
<td>25.7%</td>
</tr>
<tr>
<td>Pain Medications</td>
<td>25.3%</td>
</tr>
<tr>
<td>Antipsychotics</td>
<td>21.6%</td>
</tr>
<tr>
<td>Antitrombotics</td>
<td>19.0%</td>
</tr>
<tr>
<td>Renine ...</td>
<td>16.6%</td>
</tr>
<tr>
<td>Tear Drops</td>
<td>16.6%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>12.9%</td>
</tr>
<tr>
<td>Asthma - COPD</td>
<td>11.3%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>10.0%</td>
</tr>
</tbody>
</table>
QUESTION 1
<table>
<thead>
<tr>
<th></th>
<th>Curando</th>
<th>Evidence</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polypharmacy (5 or more M)</td>
<td>73%</td>
<td>40% - 68% - 88%</td>
<td>Hamilton et al., 2009; Vetrano et al., 2013; VIP, 2013</td>
</tr>
<tr>
<td>Excessive polypharmacy (10 M or more)</td>
<td>23%</td>
<td>17% - 44%</td>
<td>Vetrano et al., 2013; VIP, 2013</td>
</tr>
<tr>
<td>Mean rate of medications</td>
<td>6,8</td>
<td>7</td>
<td>Gnjldic et al., 2012;</td>
</tr>
<tr>
<td>Medication</td>
<td>Curando</td>
<td>Evidence</td>
<td>Reference</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------</td>
<td>----------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Antipsychotics</td>
<td>22%</td>
<td>18% - 36%</td>
<td>Verhoeven et al., 2014; Vetrano et al., 2013;</td>
</tr>
<tr>
<td>Antidepressives</td>
<td>42%</td>
<td>32% - 42% - 46%</td>
<td>Vetrano et al., 2013; Verhoeven et al., 2014; Phebe, 2006;</td>
</tr>
<tr>
<td>Benzodiazepine and Z</td>
<td>44%</td>
<td>30% - 35% - 49%</td>
<td>Bourgeois et al., 2014; Vetrano et al., 2013; Phebe, 2006; Verhoeven et al., 2014</td>
</tr>
<tr>
<td>Pain medication</td>
<td>25%</td>
<td>30% - 42%</td>
<td>Vetrano et al., 2013; Phebe, 2006</td>
</tr>
<tr>
<td>Laxatives</td>
<td>40%</td>
<td>49% - 49%</td>
<td>Phebe, 2006; Vetrano et al., 2013;</td>
</tr>
<tr>
<td>Osteoporosis</td>
<td>33%</td>
<td>15%</td>
<td>Vetrano et al., 2013;</td>
</tr>
<tr>
<td>Nutritional supplements</td>
<td>26%</td>
<td>3%</td>
<td>Vetrano et al., 2013;</td>
</tr>
</tbody>
</table>
Use of antipsychotics and antidepressants

Mean # M  Antipsychotics  Antidepressants

NH1  NH2  NH3  NH4  NH5  NH6  NH7
Use of pain medications and laxatives
Sample, not all residents includes.

Only view on quantity of the use of medications. No link with medical history of the resident.

Focus on medications related on nursing problems: laxatives, pain medication, benzodiazepines, antipsychotics and antidepressants.

Pain: do residents experience less pain or is there a lack of observation of pain?

Flemish indicatoren project VIP2:
indicator G = chronic use of medications with systemic effect.

Number of medications < number of pills.

Number of medications < number of medications x different doses.
Kojima et al., 2012

- **Calculation costs**: Two geriatric physicians checked lists of medication of all residents who took 9 or more medications n=74 (46%).
- 151 recommendations to general physicians. 86% was accepted.
- **Decrease of medications 16.6 -> 15.5**
- Significant decrease of costs
- A decrease of cost of time (**caregivers**) for administering of medication

Azermai et al., 2015

- Intervention study in 2 NH/119 residents
- Education (control) versus educatie and 1/1 support (intervention)
- Only education showed small effect.
- Intervention group:
  - Use of benzodiazepines from 50% to 38%
  - Use of antidepressants from 42% to 36%
  - Use of antipsychotics from 21% to 17%
CONCLUSION

- 73% of the residents take 5 or more medications a day
- ¼ excessive polypharmacy
- Top 5 symptom-based medications are benzodiazepines (44%), antidepressants (42%), laxatives (39%), pain medication (25%) and antipsychotics (22%)
- Nurses can focus on sleep quality, depression, obstipation, pain and behavioural and psychological symptoms.
CREATING AWARENESS

Polypharmacy in elderly in nursing homes:
how nurses can contribute to deprescribing medications.

Marie Gilis, MD, PhD, Sofie Stekelenburg, MD, PhD, Marie Leuken, RN, DOLCMS, RN

Aims: to get a good overview of the literature in the field of polypharmacy, to discuss the benefits of deprescribing and the challenges for nurses.

Background and motivation

Polypharmacy is a major concern among both healthcare professionals and patients. As the number of medications taken increases, so does the risk of adverse drug events. However, there is growing evidence that polypharmacy can have adverse effects on patient outcomes.

Method

The current study aimed to investigate the prevalence of polypharmacy in elderly patients in a nursing home and to discuss the potential benefits and challenges of deprescribing in this population.

Results

The prevalence of polypharmacy in the study population was high, with 75% of patients taking five or more medications. The most commonly prescribed medications were antidepressants, antipsychotics, and anti-inflammatory drugs.

Conclusion

Polypharmacy is a significant issue in elderly patients, and it is essential to address this issue to improve patient outcomes. Deprescribing should be a priority for nurses in this population to reduce the risk of adverse drug events and improve patient safety.

Algemene kenmerken

- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leeftijd
- 75 leef 
## Interventions Related to Nursing Problems

<table>
<thead>
<tr>
<th>Analysis of medication files</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep medication</td>
</tr>
</tbody>
</table>

### Exploration

Knowledge and attitude

### Intervention/action

- Airbreeze
- Person centered care – reminiscence
- Nutrition

Interdisciplinary team: approach => intervention/action/more evidence?
INTerventions Related to Nursing Problems

Interventions

Interdisciplinary team: approach \(\Rightarrow\) intervention/action/more evidence?

Analysis of medication files

<table>
<thead>
<tr>
<th>Sleep medication</th>
<th>Pain medication</th>
<th>Antidepressants</th>
<th>Antipsychotics</th>
<th>Laxatives</th>
<th>Supplements</th>
</tr>
</thead>
</table>

Exploration

Knowledge and attitude

Intervention/action

Airbreeze

<table>
<thead>
<tr>
<th>Person centered care – reminiscence</th>
<th>Nutrition</th>
</tr>
</thead>
</table>

Knowledge and attitude

Analysis of medication files

Exploration

Intervention/action

Interdisciplinary team: approach \(\Rightarrow\) intervention/action/more evidence?
AIM

The aim of this descriptive study was to determine the knowledge of nurses in nursing homes about psychotropic medications and to identify their willingness or barriers to discontinue the use of antipsychotics in residents.

Another aim was to determine the practice of observation of pain in elderly and the knowledge of laxatives by nurses.
NURSES’ KNOWLEDGE AND ATTITUDE TOWARDS MEDICATION

Method
- Online survey (Qualtrics)
- The Psychotropic Education And Knowledge test for nurses in nursing homes (Perehudoff et al., 2015) 19Q
- 2Q selfperception of knowledge
- Barriers to discontinuation of chronic benzodiazepine and antipsychotic use in nursing home residents (Bourgeois et al., 2014; Azermai et al., 2015) 18Q
- 2Q competence & willingness to discontinuation of psychotropics
- 4Q observation of pain
- 5Q knowledge laxatives

<table>
<thead>
<tr>
<th>Description of the participants</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>95%</td>
</tr>
<tr>
<td>Age 42 y (22y – 64y)</td>
<td></td>
</tr>
<tr>
<td>Extra education pharmacologie</td>
<td>37%</td>
</tr>
<tr>
<td>Nurse</td>
<td>83%</td>
</tr>
<tr>
<td>Headnurse</td>
<td>17%</td>
</tr>
<tr>
<td>Graduated</td>
<td>64%</td>
</tr>
<tr>
<td>Bachelor</td>
<td>36%</td>
</tr>
<tr>
<td>Workexperience 0-5 years</td>
<td>16%</td>
</tr>
<tr>
<td>Workexperience 6-15 years</td>
<td>26%</td>
</tr>
<tr>
<td>Workexperience &gt; 15 years</td>
<td>59%</td>
</tr>
</tbody>
</table>
NURSE AS CATALYST IN PRESCRIBING PSYCHOTROPIC MEDICATION

Motivations (%)

- Insufficient access to non-pharmaceutical alternatives: 56%
- No controlled access: 50%
- Important to family: 35%
- Possibility that resident harms caregiver: 30%
- Only alternative = physical restraint: 20%

56%
QUESTION 2
SELFPERCEPTION OF COMPETENCE & WILLINGNESS TO DISCONTINUATION OF PSYCHOTROPICS

<table>
<thead>
<tr>
<th></th>
<th>SELFPERCEPTION</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep medication</td>
<td>59%</td>
<td>55% (0-86%)</td>
</tr>
<tr>
<td>Psychotropic medication</td>
<td>54%</td>
<td>61% (0-89%)</td>
</tr>
</tbody>
</table>

Supporting residents with discontinuation of psychotropics
OBSERVATION OF PAIN

According to 7/10 of the nurses pain is daily observed

According to 3/10 the observation happens in a standardized way.

56% measures intensity of pain in residents without dementia (VAS-NRS)

21% of the nurses measures behaviour of residents with dementia (Repsc, Paris, Pacels)
OBSERVATION OF PAIN & KNOWLEDGE ABOUT LAXATIVA

According to 7/10 of the nurses pain is daily observed

According to 3/10 the observation happens in a standardized way.

56% measures intensity of pain in residents without dementia (VAS-NRS)

21% of the nurses measures behaviour of residents with dementia (Repos, Painad, Pacslac)

Which product ensures a prickle of the intestine and may only be used short-term?

| CATEGORIENAM |
|:---|:
| WAARDE% |
| CATEGORIENAM |
| WAARDE% |
| CATEGORIENAM |
| WAARDE% |

0 5 10 15 20 25 30 35 40 45 50
CONCLUSIONS AND IMPLICATIONS FOR PRACTICE

- Knowledge about psychotopic medication is low, but similar to other studies (Perehudoff et al., 2015).
- 1/3 of the nurses showed willingness to discontinue the use of psychotropics.
- Education about pharmacotherapy and alternatives for pharmacotherapy is the first step.
- Motivation of all stakeholders is an important barrier. Cognitive behaviour therapy can be used as an effective method to motivate residents (Montgommery, 2003).
- To a more standardized observation of pain.
- To more knowledge about obstipation and his treatment.
INTERVENTIONS RELATED TO NURSING PROBLEMS

- **Analysis of medication files**
  - Sleep medication
  - Pain medication
  - Antidepressants
  - Antipsychotics
  - Laxatives
  - Supplements

- **Exploration**
- **Knowledge and attitude**
- **Intervention/action**
  - Airbreeze
  - Person centered care – reminiscence
  - Nutrition

- **Interdisciplinary team: approach => intervention/action/more evidence?**
EFFECT OF AN AIRBREEZE MATRESS AND CUSHION COVER ON SLEEP COMFORT AND QUALITY IN ELDERLY IN NURSING HOMES

RESULTS OF A RCT
- Matresses in nursing homes: tempur covered with inpenetrable layer
- Pressure versus ventilation
- Structure of Bekaert Textiles
- Development in co-creation of product: matress and cushion cover by Bekaert Textiles – Curando
- Pilote study, RCT, 3 months
- Inclusive process of washing Malysse
To investigate the effect of an Airbreeze matress and cushion cover on quality of sleep in residents in nursing homes.

The 3D structure of Cairfull creates a layer of air between body & foam:
- distributed pressure points
- optimised airflow
Methods

- Randomized longitudinal intervention study during 3 months in 3 nursing homes
- Inclusion: residents with cognition Katz 1-1 and informed consent
- Comfort
- Pittsburgh Sleep Quality Index (PSQI)

PSQI*

- 18 questions/7 subscales
  - Duration of sleep
  - Sleep disturbance
  - Sleep latency
  - Day dysfunctioning due to sleepiness
  - Sleep efficiency
  - Overall sleep quality
  - Needs med for sleep
- Total = sum of all subscales = sleep quality PSQI
- Higher score = worse sleep quality

INCLUSION OF THE RESIDENTS

March 2015 measures
T0
100 residents

April 2015
Start intervention with mattress cover 1
Start intervention cushion cover after T1 during 2 months

May 2015 measures
T1
90 residents

June 2015 measures
T2
85 residents

July 2015 measures
T2
85 residents

95 residents includes computer randomized
48 control and 47 intervention
Start intervention with mattress cover 1
April 2015
DESCRIPTIVE RESULTS: CONTROL - INTERVENTION

<table>
<thead>
<tr>
<th>n=95 (100%)</th>
<th>Control n=48</th>
<th>Intervention n=47</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>nursing home</td>
<td>NH1 n=33</td>
<td>n=33</td>
<td>p=0.880</td>
</tr>
<tr>
<td></td>
<td>NH2 n=10</td>
<td>n=10</td>
<td>p=0.115</td>
</tr>
<tr>
<td></td>
<td>NH3 n=5</td>
<td>n=4</td>
<td>p=0.232</td>
</tr>
<tr>
<td>gender</td>
<td></td>
<td></td>
<td>p=0.474</td>
</tr>
<tr>
<td>male</td>
<td>17%</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>female</td>
<td>34%</td>
<td>35%</td>
<td></td>
</tr>
<tr>
<td>mean age (SD)</td>
<td>86.1y (5.9)</td>
<td>83.7y (8.5)</td>
<td>p=0.115</td>
</tr>
<tr>
<td>mean weight (SD)</td>
<td>73.3kg (15)</td>
<td>69.8kg (12)</td>
<td>p=0.232</td>
</tr>
<tr>
<td>use of benzodiazepines</td>
<td>22%</td>
<td>26%</td>
<td>p=0.474</td>
</tr>
<tr>
<td>PSQI mean (SD)</td>
<td></td>
<td></td>
<td>p=0.725</td>
</tr>
<tr>
<td>sleep duration</td>
<td>0.44 (0.87)</td>
<td>0.63 (1.05)</td>
<td>p=0.319</td>
</tr>
<tr>
<td>disturbance</td>
<td>1.33 (0.52)</td>
<td>1.25 (0.44)</td>
<td>p=0.546</td>
</tr>
<tr>
<td>in sleep time</td>
<td>1.47 (1.03)</td>
<td>1.61 (1.11)</td>
<td>p=0.940</td>
</tr>
<tr>
<td>dysfunctioning</td>
<td>0.54 (0.74)</td>
<td>0.53 (0.72)</td>
<td>p=0.401</td>
</tr>
<tr>
<td>sleep efficiency</td>
<td>2.20 (1.07)</td>
<td>2.48 (0.95)</td>
<td>p=0.485</td>
</tr>
<tr>
<td>sleep quality</td>
<td>0.93 (0.38)</td>
<td>0.82 (0.43)</td>
<td>p=0.474</td>
</tr>
<tr>
<td>use of sleep medication</td>
<td>1.31 (1.50)</td>
<td>1.59 (1.51)</td>
<td>p=0.214</td>
</tr>
<tr>
<td>Total PSQI</td>
<td>8.25 (2.78)</td>
<td>8.96 (2.73)</td>
<td>p=0.375</td>
</tr>
<tr>
<td>good sleep quality</td>
<td>n=8</td>
<td>n=4</td>
<td>p=0.43</td>
</tr>
<tr>
<td>bad sleep quality</td>
<td>n=40</td>
<td>n=43</td>
<td>p=0.214</td>
</tr>
</tbody>
</table>
DESCRIPTIVE RESULTS: DIFFERENCE IN SLEEP QUALITY BETWEEN BENZODIAZEPINE USERS AND NON-USERS
In 33% of the cases the general practitioner was motivated for discontinuation of benzodiazepine

Nurses only in 13% of the cases.

Barriers:

- Anxiety for resistance of the resident
- Preference for pharmacological intervention
- Anxiety for rebound of symptoms
- Anxiety for a higher workload
- Opinion that discontinuation is not necessary or difficult because of the alter age of the resident
- Alternatives = more time
- Discontinuation of benzo is difficult because of organizational factors
SLEEP QUALITY:
DO YOU HAVE OTHERS REASONS FOR HAVING BAD SLEEP DURING NIGHT? N=67

Personal factors
- Worry
- Death of relatives
- Health/getting older
- Family
- Loneliness
- Missing home
- Loss of autonomy
- Not feeling home in NH
- Weary

Environmental factors
- Noise other residents
- Pain
- Practical things
- Caregivers entering the room
- Light
- Bed
- Warm
- Football

Now that I reached this blessed age, I’m stuck
RESULTS: EFFECT ON PAIN AND SLEEP QUALITY

**Pain** $p=0.596$

Mean PAIN over time between control and intervention group. $p=0.596$
Each error bar is constructed using 1 standard error from the mean.

**Total sleep quality** $p=0.716$

Mean TOTAL SLEEP QUALITY over time between control and intervention group. $p=0.716$ Each error bar is constructed using 1 standard error from the mean.
RESULTS: EFFECT ON SLEEP COMFORT AND SLEEP DURATION

Good sleep comfort

- $p = 0.018$

Short sleep duration

- $p = 0.004$

GOOD SLEEP COMFORT over time between control and intervention group $p = 0.018$

SHORT SLEEP DURATION over time between control and intervention group $p = 0.004$
RESULTS: EXPERIENCE AIRBREEZE

Experience airbreeze

Matress cover 7,9/10

Cushion cover 7,7/10
32% of the residents slept better Airbreeze (n=28).

72% of the residents who used Airbreeze cushion cover wants to continue the use of Airbreeze for free. (n=43).

79% of the residents who used Airbreeze mattress cover wants to continue the use of Airbreeze for free. (n=43).

55% of the residents who never used Airbreeze cushion cover wants to use it for free (n=42).

48% of the residents who never used Airbreeze mattress cover wants to use it for free. (n=42)
As shown already in a study of Bourgeois et al., (2013) benzodiazepines have no beneficial long-term effect. Alternative approaches are necessary. Despite the small number of participants, a small effect on comfort and sleep duration is shown. Airbreeze mattress and cushion cover may contribute to increase sleep quality of residents in nursing homes as part of a multiple-strategy and taking resident’s preferences into account.
Offered to all residents depending on their personal preference.

Results spread to nurses and nurse-assistants.

Offered in Cura shop.
### INTERVENTIONS RELATED TO NURSING PROBLEMS

<table>
<thead>
<tr>
<th>Analysis of medication files</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep medication</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exploration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge and attitude</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intervention/action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airbreeze</td>
</tr>
</tbody>
</table>

Interdisciplinary team: approach => intervention/action/more evidence?
EFFECT OF INDIVIDUAL REMINISCENCE FOR OLDER ADULTS WITH MILD TO MODERATE DEMENTIA IN NURSING HOMES

RESULTS OF A THREE-ARM RANDOMISED CONTROLLED TRIAL
VAN BOGAERT ET AL., 2016
To stimulate reminiscence of older adults with dementia performed individually or through group sessions is a well known practice in nursing homes resulting in effects on behaviour and well-being as an alternative for medication.

Robust scientific proof of the effectiveness of individual reminiscence therapy performed in nursing homes is sparse.

Previous studies showed that residents who received individual reminiscence therapy had significantly less depressive symptoms.

Lack of placebo group.

(Van Bogaert et al., 2016)
To investigate the effect of a standardized individualized intervention based on the SolCos transformational reminiscence model on depressive symptoms, cognition and behaviour for older people with mild to moderate dementia.
METHODS

**Control group**
- 10 weeks standard care
- 13 weeks standard care

**Social activity group**
- 10 weeks individual social activity
- 13 weeks individual social activity 1x/week

**Reminiscence group**
- 10 weeks individual reminiscence
- 13 weeks individual reminiscence 1x/week

OUTCOMES

- Cornell Scale for Depression in Dementia
- Qualidem
- Neuropsychiatric Inventory
METHOD

Control group n=45
- 1 died
- 1 moved
- 2 died
- 13 stopped

Social activity group n=45
- 1 cognitive deterioration
- 3 died
- 2 others
- 2 stopped
- 5 not enough sessions
- 1 died
- 9 stopped

Reminiscence group n=47
- 9 not enough sessions
- 3 hospital
- 1 others
- 2 stopped
- 2 not enough sessions
- 1 cognitive deterioration
- 1 other
- 9 stopped

177 from 7 NH met inclusion criteria

143 residents start study
- 2 stop
- 1 problem speech
- 1 died
- 1 cognitive deterioration
- 1 hospital admission

137 residents randomised in each NH

143 residents start study
- 2 stop
- 1 problem speech
- 1 died
- 1 cognitive deterioration
- 1 hospital admission

137 residents randomised in each NH
Meld je aan om dit leuk te vinden

Katringillis: Collega Hilde Lahaye dompelt vol enthousiasme medewerkers van #curando onder in de wereld van reminiscentie

Aanmelden om dit leuk te vinden of hier op te reageren.
### DESCRIPTION OF THE RESIDENTS

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Reminiscence</th>
<th>Social activity</th>
<th>Control</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=32</td>
<td>n=37</td>
<td>n=37</td>
<td>n=43</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>74%</td>
<td>78%</td>
<td>65%</td>
<td>79%</td>
<td>0.291 Chi²</td>
</tr>
<tr>
<td>Age (mean)</td>
<td>85,5 (60-98)</td>
<td>85 (72-98)</td>
<td>86,7 (71-98)</td>
<td>84,7 (60-94)</td>
<td>0.378 Ano</td>
</tr>
<tr>
<td>Visitors at least 1/Week</td>
<td>81%</td>
<td>88%</td>
<td>73%</td>
<td>81%</td>
<td>0.310 Chi²</td>
</tr>
<tr>
<td>Activity at least 1/Week</td>
<td>73%</td>
<td>56%</td>
<td>78%</td>
<td>81%</td>
<td>0.036 Chi²</td>
</tr>
<tr>
<td>Single</td>
<td>87%</td>
<td>91%</td>
<td>87%</td>
<td>86%</td>
<td>0.895 Fish</td>
</tr>
<tr>
<td>Together with partner</td>
<td>4%</td>
<td>3%</td>
<td>5%</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Together with non-partner</td>
<td>9%</td>
<td>6%</td>
<td>8%</td>
<td>12%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>medication</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>pain</td>
<td>39%</td>
</tr>
<tr>
<td>benzodiazepine</td>
<td>41%</td>
</tr>
<tr>
<td>antipschotics</td>
<td>36%</td>
</tr>
<tr>
<td>antidepressives</td>
<td>42%</td>
</tr>
<tr>
<td>Anti-Alzheimer</td>
<td>27%</td>
</tr>
</tbody>
</table>
BEHAVIOUR, PSYCHOLOGICAL & DEPRESSIVE SYMPTOMS IN RESIDENTS WITH MILD TO MODERATE DEMENTIA (NPI)

N = 137

<table>
<thead>
<tr>
<th>Subscale NPI</th>
<th>Prevalence %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agitation/Aggression</td>
<td>40%</td>
</tr>
<tr>
<td>Irritability</td>
<td>37.5%</td>
</tr>
<tr>
<td>Depression</td>
<td>30%</td>
</tr>
<tr>
<td>Anxiety</td>
<td>29.5%</td>
</tr>
<tr>
<td>Apathy</td>
<td>28%</td>
</tr>
<tr>
<td>Delusions</td>
<td>23%</td>
</tr>
<tr>
<td>Sleep disturbances</td>
<td>22%</td>
</tr>
<tr>
<td>Disinhibition</td>
<td>21%</td>
</tr>
<tr>
<td>Changed eating pattern</td>
<td>20.5%</td>
</tr>
<tr>
<td>Hallucinations</td>
<td>16%</td>
</tr>
<tr>
<td>Euphoria</td>
<td>9%</td>
</tr>
<tr>
<td>8&lt;12</td>
<td>21%</td>
</tr>
<tr>
<td>&gt;8 = depressive sympt</td>
<td>13%</td>
</tr>
<tr>
<td>≤8</td>
<td>66%</td>
</tr>
</tbody>
</table>

CSDD

>8 = depressive sympt

NPI subscales: aggression, irritability, depression, anxiety, apathy, delusions, sleep disturbances, disinhibition, changed eating pattern, hallucinations, euphoria.
INTERVENTION

- **Duration:**
  - Mean time for 1 session reminiscence = 33 minutes
  - Mean time for 1 session social activity = 36 minutes

- **Themes** most frequently used:
  - Reminiscence: ADL, living places and free time
  - Social activity: walking, reading and board games

- Reminiscence: residents were **attentive** and **active**. They get **spontaneous** memories. The majority of the caregivers experienced that residents were **not able to handle autonomously the memorybox.**
Interest during session (16/12.7)
p<0.001

Attention during session (12.6/12.3)
p=0.462
EFFECT OF TIME

Cognition p<0.001

Depression p=0.007
EFFECT OF GROUP

Depression NPI p=0.024

NPI depression

- reminiscence
- social activity
- control
**EFFECT OF GROUP**

**INTERACTION TIME X GROUP**

**Depression NPI p=0.024**

**Social relations p=0.069**
EXPERIENCES OF CAREGIVERS N=76

In general a positive experience 8/10

Nice to do, not stressful and not boring

Valuable for residents

Circumstances in favor (time, place and materials)
EXPERIENCES OF CAREGIVERS

- It requires perseverance
- Training
- Mutuality
  - Affects residents
  - Affects caregivers
- Family
- Resistance
- Qualytime as a wish
CONCLUSIONS

Quantitative
- No effect on depressive symptoms and cognition was found
- Residents showed significant more interest during reminiscence therapy than during social activity
- Unexpected trend over time at T1
- Trend for better social relationships when applying reminiscence therapy

Qualitative
- Support of the resident is necessary
- Valuable for resident and therapist: mutuality
- Need for training of caregivers and family
- Reminiscence as part of person-centered care is an attitude
Studienamiddag

Persoonsgerichte zorg als sleutel voor kwaliteit van leven bij personen met dementie

**Plaats:** VIVES Campus Brugge

Vrijdag 25 november 2016

13u tot 17u

**Programma:**

13.00u – 13.30u: Ontvangst
Moderator: Dr. Marc Icoon

13.30u – 13.40u: Vervolking
Dr. Guy Aerts, voorzitter BNVV

Dr. Michèle Niemegeers, Vives

14.15u – 15.00u: Persoonsgerichte zorg voor ouderen met de medische wetenschappelijke basis
De zorg voor personen met dementie in Vlaanderen en verreweg Europese perspectief
Prof. Dr. Peter Van Boggaert, Universiteit Antwerpen

15.00u – 15.20u: Persoon

15.20u – 16.00u: Realisering van persoonsgerichte zorg bij personen met dementie
Mev. Meïl Shmaïdani, Mevr. Stéfase Benoot en Mevr. Sineke Janssens, w.v. Canterijn, Wereldvic Brugge

16.00u – 16.45u: Zorg voor familie van personen met dementie als deel als van persoonsgerichte zorg
Mev. Mélanie Delanouwille. Expertise cendrum dementie Foton, Brugge

16.45u – 17.00u: Sluiting

**Deelnemeprijs:**

Leden BNVV 2016: gratis - Nieuw-leden: 10€
Studenten/docenten Vives: gratis

**Inschrijven:** www.BNVV.be
Privé: Persoonsgerichte zorg bij ouderen met dementie
IMPLEMENTATION: MENU PERSON-CENTERED CARE

**Caregiver**
- Reference person: family
- Reference person: colleagues
- Therapist
- Ambassador of PCC
- Inspirator
- Facilitator

**Resident**
- Cognitive stimulation
  - Life story
  - Reminiscence
  - Social Activity
- ADL
- Music therapy
- Massage – touch
- Physical activity
  - Walking
  - Cooking
  - Cycling
  - ….

**Family**
- Training cognitive stimulation
- Partner-therapist
- ….
Information about theme:

Complementary questions:

Senses:
- see
- smell
- hear
- feel
- taste

Other objects about this theme:
CARE FOR THE OLDER PERSON: HOW CAN WE DO THE RIGHT THINGS RIGHT?

- Care for older people is in transition
- Globally a lot of research & innovations
- Difficult to measure individual, person centered approaches
- Difficult the measure long-term effect
- Role of nurses in elderly care: innovation