Effects of the COCP programme in children and youngsters with PIMD

Margriet Heim
Communicative Development of nonspeaking (cerebral palsy) children and their Communication Partners
COCPvg

Adapted version of COCP for children and adults with PIMD

two studies

1. longitudinal effect study
2. evaluation of the implementation and social validity
Overview

→ COCP intervention programme

▪ design effect study
▪ measures & analysis
▪ results partner strategies
▪ results turns and initiations
▪ results communicative functions
▪ summary and conclusion
Project team

Margriet Heim

Frank Velthausz

Marjan Veen
Main goal COCP

Learn to communicate in daily social interaction situations

- effectively
- efficiently
- social acceptable
What is needed?

**Access** to communication

- communication partners recognise communicative signals
- availability of means to communicate (modes, communication aids, vocabulary)

**Opportunity** to communicate

- communication partners create opportunities for the client to communicate
Organisational framework

communication group

parents  grandparents  neighbours/friends  family  babysitter

attendants  teachers  assistants  therapists

intervention team:
special educationalist
speech therapist
personal attendant
COCP intervention cycle

Assessment
- Step 1 Background information
- Step 2 Client assessment
- Step 3 Observation interaction

Implementation
- Step 6 Intervention

Goal & plan
- Step 4 Goal setting
- Step 5 Intervention plan

Evaluation
- Step 7 Evaluation

ISAAC2010 / Heim & Veen
Basic procedures COCP

- group meetings
- individual communication plans
- coaching communication partners based on video recordings
Central issues COCP

Communication partners

- facilitating strategies

Clients

- communicative functions
- communication modes
Basic principle of COCP

if speaking communication partners use facilitating strategies

nonspeaking clients will join in
Overview

✓ COCP intervention programme

çon  design effect study

▪ measures & analysis
▪ results partner strategies
▪ results turns and initiations
▪ results communicative functions
▪ summary and conclusion
General question

Does the COCP programme lead to an improvement of the communicative interaction between nonspeaking persons with PIMD and significant others within their social network?
Participants - clients

9 clients with (very) severe intellectual and multiple disabilities

- 8 girls, 1 boy
- aged 4 – 23 years
- nonspeaking
- mental age 0;6 – 3
Participants - partners

2 communication partners of each client:

- parent or caregiver in home environment
- personal attendant in daycentre environment
- 16 dyads in total
Research design

- longitudinal
- within-subject: each subject is his/her own referent
- multiple measurements in each phase (baseline, intervention, post intervention)
## Data collection

<table>
<thead>
<tr>
<th>video’s</th>
<th>with parent</th>
<th>with caretaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>baseline</td>
<td>3 within 1 month</td>
<td>3 within 1 month</td>
</tr>
<tr>
<td>intervention</td>
<td>4 every 6 weeks</td>
<td>4 every 6 weeks</td>
</tr>
<tr>
<td>post intervention</td>
<td>3 within 1 month</td>
<td>3 within 1 month</td>
</tr>
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</table>
## Time schedule intervention

<table>
<thead>
<tr>
<th>07</th>
<th>08</th>
<th>09</th>
</tr>
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<tbody>
<tr>
<td>nov</td>
<td>dec</td>
<td>jan</td>
</tr>
<tr>
<td>feb</td>
<td>mar</td>
<td>apr</td>
</tr>
<tr>
<td>may</td>
<td>jun</td>
<td>jul</td>
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<tr>
<td>aug</td>
<td>sep</td>
<td>oct</td>
</tr>
<tr>
<td>nov</td>
<td>dec</td>
<td>jan</td>
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</tbody>
</table>

- **Assessment**
- **Goal & Plan**
- **Intervention**
## Time schedule sampling

<table>
<thead>
<tr>
<th>Year</th>
<th>Baseline</th>
<th>Intervention</th>
<th>Post Intervention</th>
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</thead>
<tbody>
<tr>
<td>2007</td>
<td>B123</td>
<td>I 1, I 2, I 3, I 4</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>P123</td>
</tr>
</tbody>
</table>

### Key Points
- **Assessment**
- **Goal & Plan**
- **Intervention**
Time schedule instruction

baseline measurements B1 B2 B3

- general instruction in group meeting
- intervention measurement I1
- individual feedback based on I1
- I2
- individual feedback based on I2
- I3 et cetera
Overview

✓ COCP intervention programme
✓ design effect study
⇒ measures & analysis
  ▪ results partner strategies
  ▪ results turns and initiations
  ▪ results communicative functions
  ▪ summary and conclusion
Specific questions

Does the intervention lead to changes?

- partner’s use of facilitating strategies
- turn taking patterns
- patterns of topic introductions
- client’s use of communicative functions (frequency and variation)
Analysis procedures

- fragment of 5 minutes selected from each recording
- each fragment divided into segments of 20 seconds
- for each recording 15 coded segments
- mean score for each recording
Variables

each segment coded for:

- partner strategies (partner)
- distribution of turns (dyad)
- distribution of initiations (dyad)
- communicative functions (client)
Overview

✓ COCP intervention programme
✓ design effect study
✓ measures & analysis

➔ results partner strategies
  ▪ results turns and initiations
  ▪ results communicative functions
  ▪ summary and conclusion
Kirsty met José
November 2007

(singing about the sheep)
Partner strategies

1. structure environment
2. follow child’s lead
3. create shared focus
4. provide opportunities
5. expect communication
6. pace interaction (pause)
7. provide models
8. proper language input
9. prompt
10. reward
Strategies grouped

4 categories
- pacing
- responsiveness
- eliciting
- modelling
Coding strategies

per segment judgement of each combined category with 3-point scale:

3 optimal use (+)
2 used, but could be used more often or more facilitative (±)
1 no or not facilitative use (−)
# Overview partner effects

<table>
<thead>
<tr>
<th></th>
<th>pacing</th>
<th>responsive</th>
<th>eliciting</th>
<th>modelling</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>parent</td>
<td>attend.</td>
<td>parent</td>
<td>attend.</td>
</tr>
<tr>
<td>Anne</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td>Charley</td>
<td>↑</td>
<td>n/a</td>
<td>↑</td>
<td>n/a</td>
</tr>
<tr>
<td>Demy</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td>Imke</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td>Iris</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td>Joris</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td>Kirsty</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td>Marleen</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td>Sophie</td>
<td>n/a</td>
<td>↑</td>
<td>n/a</td>
<td>↑</td>
</tr>
</tbody>
</table>

ISAAC2010 / Heim & Veen
overall effect phase  
F = 52.10, p<.01
phase * client  
F = 1.52, p=.296
overall effect phase  
F = 46.75, p<.01

phase * situation  
F = 0.42, p=.526
overall effect phase  
F = 53.65, p<.01

phase * client
F = 3.15 p=.074
overall effect phase  
F = 25,149, p<.01

phase * situation  
F = 0.001, p=.981
Overall effect phase phase * client
F = 30.78, p < .01
F = 1.15, p = .434
overall effect phase  
F = 26.39, p<.01  
phase * situation  
F = 0.00, p=.985
overall effect phase  
F = 30.78, p < .01

phase * client  
F = 1.15, p = .434
overall effect phase  F = 10.36, p<.01
phase * situation  F = 0.289, p=.599
Overview

✓ COCP intervention programme
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✓ measures & analysis
✓ results partner strategies
→ results turns and initiations
  ▪ results communicative functions
  ▪ summary and conclusion
Turns & initiations

definitions:

**turn**  intentional behaviour
directed towards partner

**initiation**  introduction of new topic or
focus of attention
Coding turns & initiations

per segment with 5-point scale:

1 client dominance: all turns
2 client most turns
3 equally distributed (balanced)
4 partner most turns
5 partner dominance: all turns
## Overview turn taking

<table>
<thead>
<tr>
<th></th>
<th>turntaking</th>
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<tbody>
<tr>
<td></td>
<td>home</td>
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</tr>
<tr>
<td>Anne</td>
<td>↑</td>
<td></td>
</tr>
<tr>
<td>Charley</td>
<td>↑</td>
<td>n/a</td>
</tr>
<tr>
<td>Demy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Imke</td>
<td></td>
<td>↑</td>
</tr>
<tr>
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<td>Marleen</td>
<td></td>
<td>↑</td>
</tr>
<tr>
<td>Sophie</td>
<td></td>
<td>n/a</td>
</tr>
</tbody>
</table>
Turn taking with parent/caregiver

- Sophie
- Marleen
- Kirsty
- Joris
- Imke
- Iris
- Demy
- Charley
- Anne

Legend:
- **post**
- **baseline**
Turn taking with attendant

- Sophie
- Marleen
- Kirsty
- Joris
- Imke
- Iris
- Demy
- Charley
- Anne

- post
- baseline
Overall effect phase
phase * client

F = 18.18, p < .01
F = 5.03, p < .01
overall effect phase  \( F = 6.09, p<0.01 \)
phase * situation  \( F = 0.59, p=0.94 \)
## Overview topic introductions

<table>
<thead>
<tr>
<th>Name</th>
<th>Initiations</th>
<th>Home</th>
<th>Daycare</th>
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<tbody>
<tr>
<td>Anne</td>
<td></td>
<td>💪</td>
<td></td>
</tr>
<tr>
<td>Charley</td>
<td></td>
<td></td>
<td>n/a</td>
</tr>
<tr>
<td>Demy</td>
<td></td>
<td></td>
<td></td>
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<tr>
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</tr>
<tr>
<td>Sophie</td>
<td></td>
<td></td>
<td>n/a</td>
</tr>
</tbody>
</table>
Initiation patterns with parent/caregiver

- Sophie
- Marleen
- Kirsty
- Joris
- Imke
- Iris
- Demy
- Charley
- Anne

Legend:
- post
- baseline
Initiation patterns with attendant

attendant

Sophie
Marleen
Kirsty
Joris
Imke
Iris
Demy
Charley
Anne

post
baseline
Initiation patterns

overall effect phase
F = 8.58, p < .01

phase * client
F = 1.98, p = .103
overall effect phase
phase * situation

F = 8.07, p<0.01
F = 1.17, p=1.17
Overview

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→ results communicative functions
▪ summary and conclusion
Communicative functions

1. attention to partner
2. expression of feelings
3. indication interrupted activity
4. turn taking
5. acceptance
6. protest / rejection
7. choices
8. greeting / closing
9. request assistance
10. request object/action
11. request attention
12. answering yes/no
13. commenting
14. request information
15. formulating feelings
16. joking & pretending
Coding functions

per segment:

→ which functions?

→ with which mode(s)?
Expectations functions

- increased frequency per segment
- emergence of new functions
- increased use of target function
## Overview results functions

<table>
<thead>
<tr>
<th></th>
<th>frequency</th>
<th>new function(s)</th>
<th>target function</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>home</td>
<td>daycare</td>
<td>home</td>
</tr>
<tr>
<td>Anne</td>
<td>☠</td>
<td>☠</td>
<td>⇔</td>
</tr>
<tr>
<td>Charley</td>
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ISAAC2010 / Heim & Veen
Overview

✓ COCP intervention programme
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✓ results communicative functions
⇒ summary and conclusion
## Overview positive changes

<table>
<thead>
<tr>
<th></th>
<th>home n=9</th>
<th>daycentre n=7</th>
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</thead>
<tbody>
<tr>
<td>improved pacing</td>
<td>78%</td>
<td>67%</td>
</tr>
<tr>
<td>increased responsiveness</td>
<td>78%</td>
<td>67%</td>
</tr>
<tr>
<td>increased eliciting</td>
<td>89%</td>
<td>56%</td>
</tr>
<tr>
<td>increased modelling</td>
<td>33%</td>
<td>44%</td>
</tr>
<tr>
<td>more balance in turns</td>
<td>44%</td>
<td>57%</td>
</tr>
<tr>
<td>more balance in initiations</td>
<td>56%</td>
<td>57%</td>
</tr>
<tr>
<td>increased frequency functions</td>
<td>67%</td>
<td>14%</td>
</tr>
<tr>
<td>increased variation functions</td>
<td>67%</td>
<td>71%</td>
</tr>
<tr>
<td>increased use target function</td>
<td>56%</td>
<td>43%</td>
</tr>
</tbody>
</table>
Conclusion

COCP intervention leads to

- more facilitative interaction behaviours of communication partners
- more balanced interaction patterns (turns and/or initiations)
- improved communication skills of clients
Contact

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