Informing a student's application of systematic review and trial results in OMT practice

Which information is relevant in trials and reviews

Dr. Jan Pool
Associate Professor University of Applied Sciences Utrecht
Master Program Physical Therapy (OMT)
Member Standard Committee IFOMPT

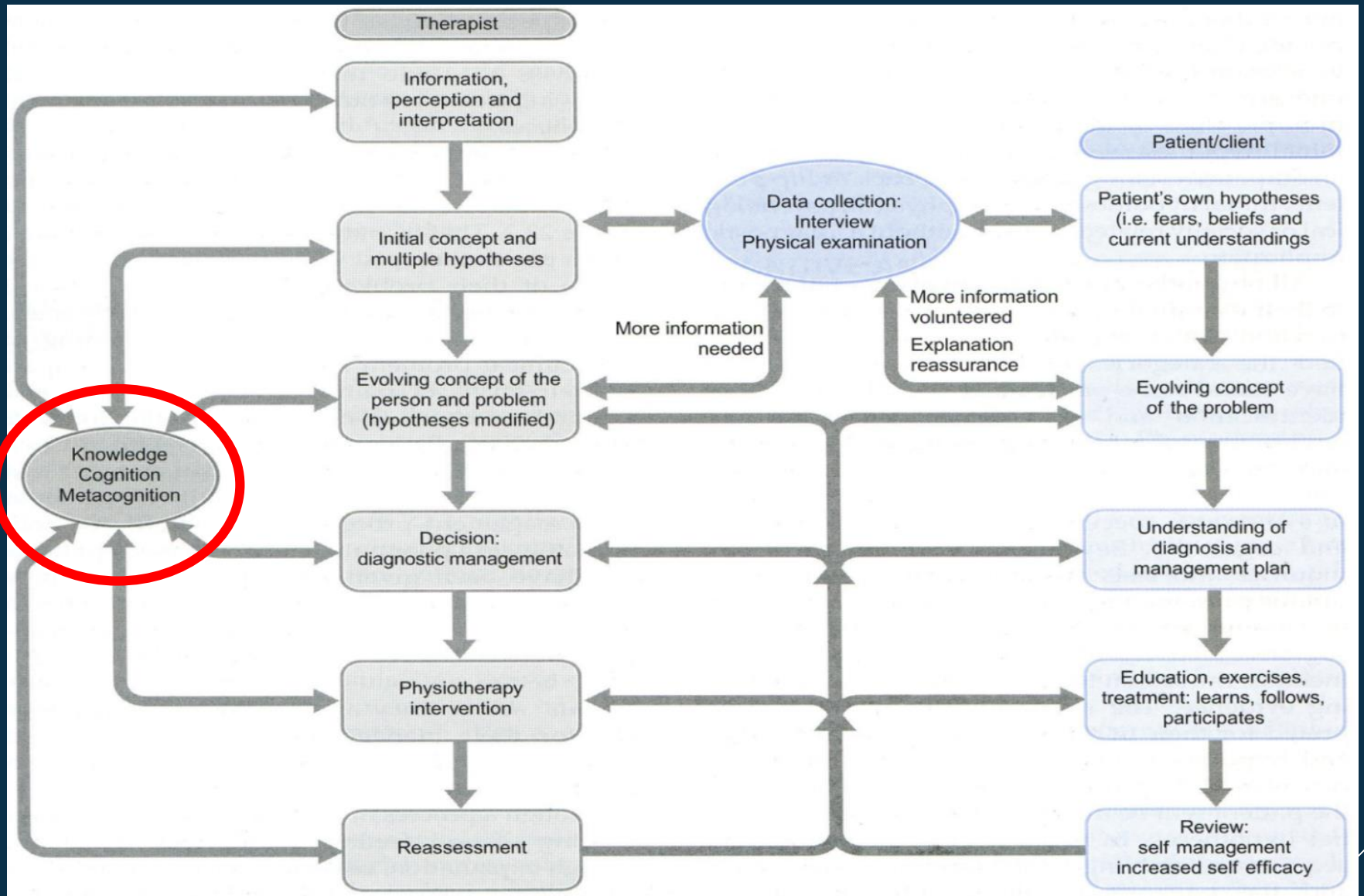


Figure 22.2 Biopsychosocial model of clinical reasoning as a collaborative process between physiotherapists and patients (adapted from Edwards & Jones 1995, with permission)

(Edwards et al, 2004)

OFTEN OUTCOME OF RCT'S AND OR REVIEWS WILL BE USED IN THE CLINICAL REASONING PROCES

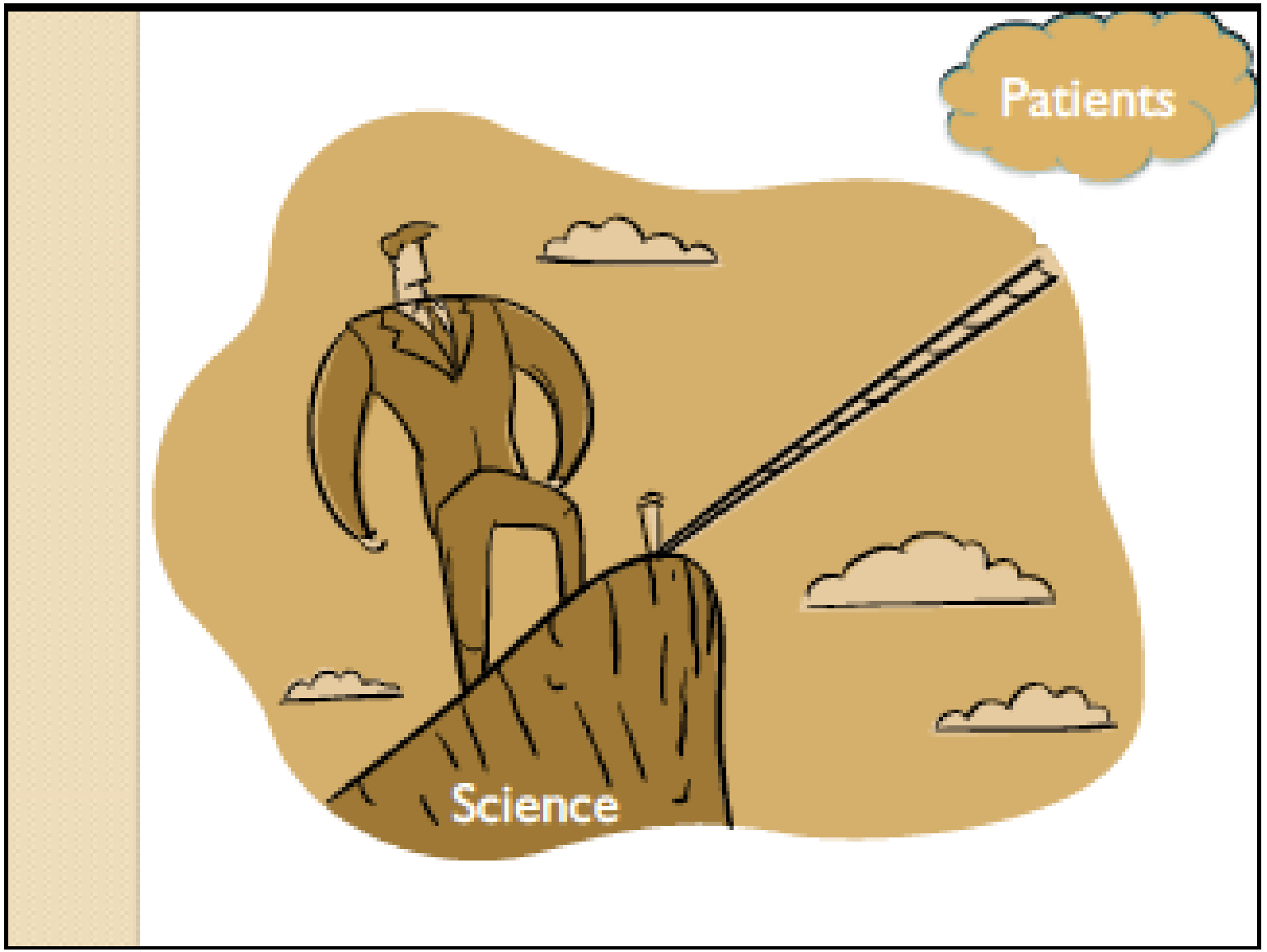
- Is it possible to apply the results to individual patients??

Objective: discuss barriers and facilitators of using outcome of RCT's and reviews in clinical proctice

Reporting of complex interventions is often not satisfying, withholding important information on the interventions' theory base, modelling of components and outcomes, pilot testing and process evaluation alongside the clinical trial.

Transparent and comprehensive reporting is needed for knowledge synthesis and successful transfer into practice.

R. Mohler et al. / International Journal of Nursing Studies 49 (2012) 40–46


Patients
Science

Summary of studies that assessed whether interventions in published trial reports could be replicated

Clinical area	No of Trials	No (%) replicable	Methods of assessment
Back pain[12]	24	3 (13)	Information sufficient for consumers
Surgical procedures[13]	158	138 (87)	Required only that "some" detail was provided, not sufficient for replication; 41% also provided some detail on actual surgery used
Weight loss interventions[14]	63	62 (98)	Compliance with item 4 of CONSORT statement*
Range of topics published in *Evidence Based Medicine*[7]	55	36 (65)	Two general practitioners were independently asked whether they could use this treatment with patients if they saw them tomorrow

*2001 update.[11]

(Glasziou BMJ 2010)

??????????

Table 1
CReDECI checklist.

No	Item
	First stage – Development
1	Description of the intervention's underlying theoretical considerations
2	Description of all components of the intervention
3	Rationale for the selection of the intervention's components
4	Illustration of any intended interactions between different components
5	Rationale for the aim/essential functions of the intervention's components, including the evidence whether the components are appropriate for achieving this goal
6	Consideration of contextual factors and determinants of the setting in the modelling of the intervention
	Second stage – Feasibility and piloting
7	Information on pilot-testing
8	In case of pilot-test: presentation of all relevant results and their impact on the modelling of the final intervention
	Third stage – Introduction of the intervention and evaluation
9	Description of the control intervention (comparator)
10	If the study was conducted in different clusters or centres: description of a standardised implementation strategy throughout the centres
11	Description of all materials or tools used for the implementation of the intervention to allow a replication of the study
12	Description of an evaluation of the implementation process
13	Description of any deviation from the study protocol during the implementation process
14	Description of facilitators or barriers revealed by the process evaluation which have influenced the interventions' implementation
15	Description of unexpected interactions between components of the intervention and the environment in which the intervention was implemented
16	Description of costs or required resources for the intervention's implementation

Möhler et al. Trials (2015) 16:204

Item 1	Brief name: provide the name or a phase that described the intervention
Item 2	Why: describe any rationale, theory, or goal of the elements essential to the intervention
Item 3	a) What (materials): describe any physical or information materials used in the intervention, including those provided to participants or used in intervention delivery or in training of intervention providers; b) Provide information on where the materials can be accessed (e.g. online appendix, URL)
Item 4	What (procedures): describe each of the procedures, activities, and/or processes used in the intervention, including any enabling or support activities
Item 5	Who provided: for each category of intervention provider (e.g. psychologist, nursing assistant), describe their expertise, background and any specific training given
Item 6	a) How: describe the modes of delivery (such as face to face or by some other mechanism, such as internet or telephone) of the intervention and; b) whether it was provided individually or in a group
Item 7	Where: describe the type(s) of location(s) where the intervention occurred, including any necessary infrastructure or relevant features (eerste lijn etc)
Item 8	When and how much: describe the number of times the intervention was delivered and over what period of time including: a) the number of sessions; ..... b) their schedule; .....p/w c) their duration;.....min d) intensity or dose .....

Hoffman et al. Better reporting of interventions: template for intervention description and replication (TIDieR) checklist and guide *BMJ* 2014;348:g1687

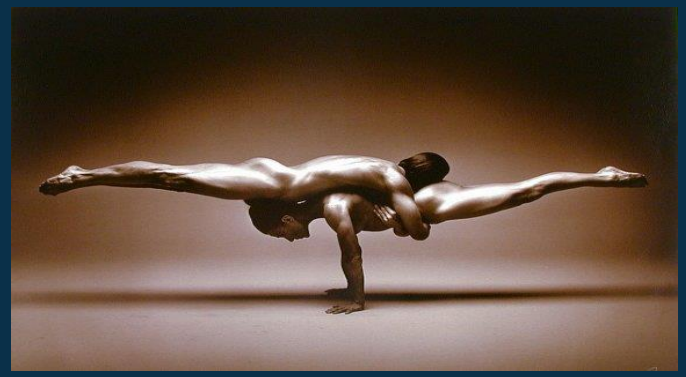
An example

GROSS A, ET AL. MANIPULATION OR MOBILISATION FOR NECK PAIN.
COCHRANE DATABASE OF SYSTEMATIC REVIEWS 2010, ISSUE 1.

- **Authors' conclusions**
- Cervical manipulation and mobilisation produced similar changes. Either may provide immediate- or short-term change; no longterm data are available. Thoracic manipulation may improve pain and function. Optimal techniques and dose are unresolved.

TWO BLACK BOXES

- **1) The patient with neck pain**
- **2) Intervention**



- Patient

- **Neck pain no causal relations, various levels and various perceptions.**

- **Neck pain with or without radiating pain in the extremities**

- **Neck pain with or without headache or dizziness**

- Patient

- **Mechanical neck pain WAD category I and II**
  - **myofascial neck pain**
  - **degenerative changes**
- **Neck pain with radiculopathy, WAD category III**

Imagine how you'd feel…

I feel spacey…

I'm not sure where my head is…

I feel off…

I feel lightheaded…

I feel imbalanced…

I feel ????

- Patient

Also;

- age ??
- Level of pain
- Prognostic factors
- Risc factors
- Activity level (fitness)
- Level of participation
- Level of selfmanagement
- Illness perceptions
- Expectancies

Can it influence outcome?

What is the research really about?

I EAT EVERYTHING SO MY DIET IS ALSO IN IT

- Intervention

- Unpacking the black box, ???!!

1. Detailed description of an intervention
2. Easy replication of an intervention

Only 7% of the space in an article is used for intervention description in 141 studies in Nursing Research Journals

Unpacking the Black Box: Countering the Problem of Inadequate Intervention Descriptions in Research Reports
Vicki S. Conn
West J Nurs Res 2012 34: 427

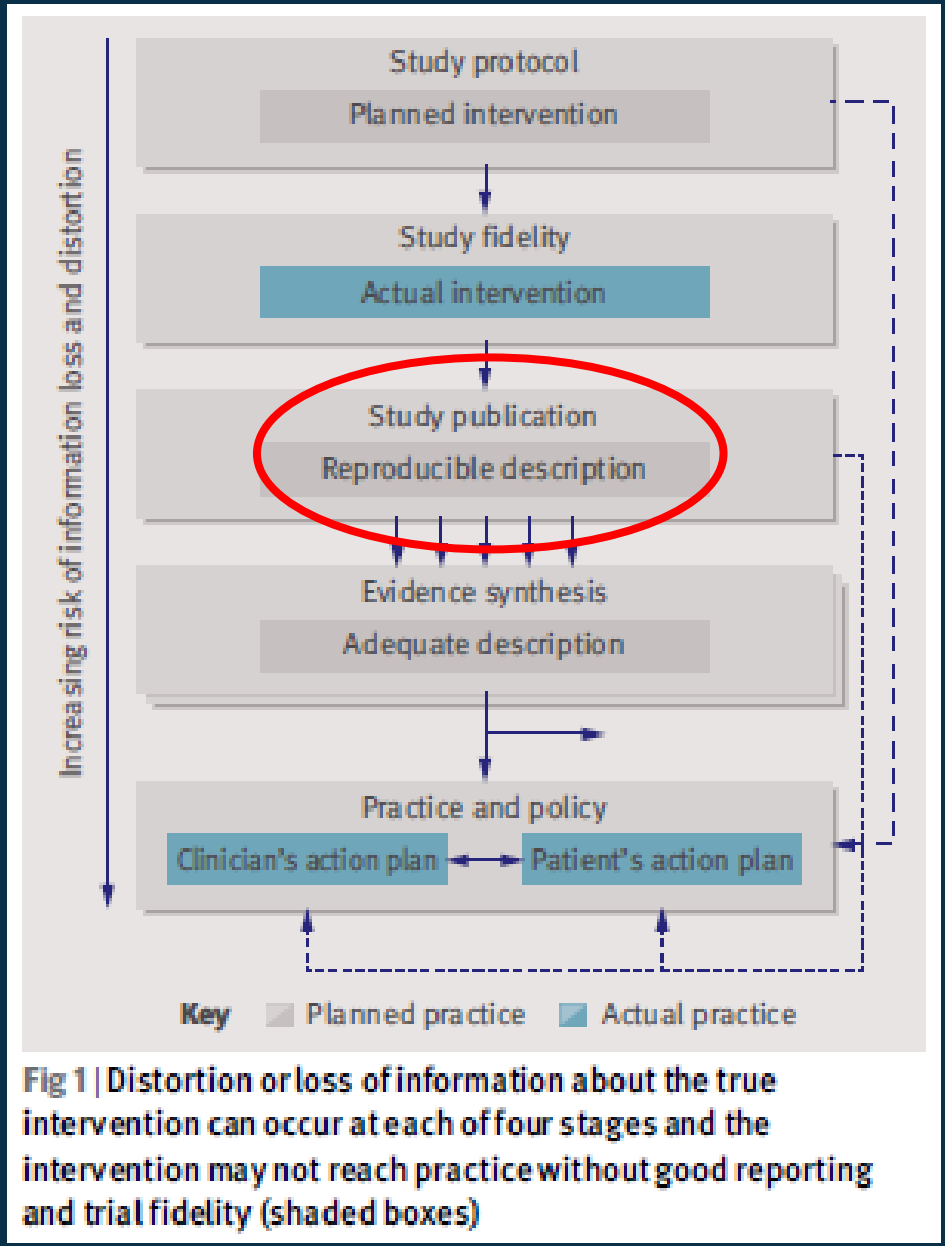
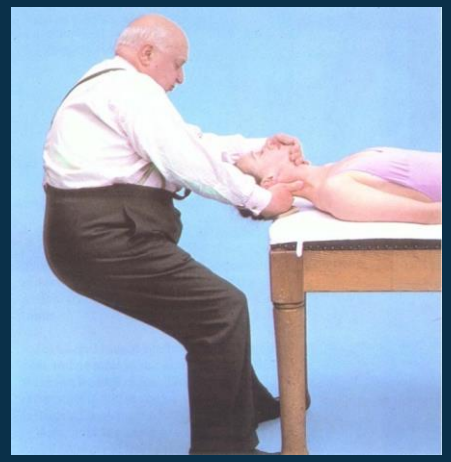


Fig 1 | Distortion or loss of information about the true intervention can occur at each of four stages and the intervention may not reach practice without good reporting and trial fidelity (shaded boxes)

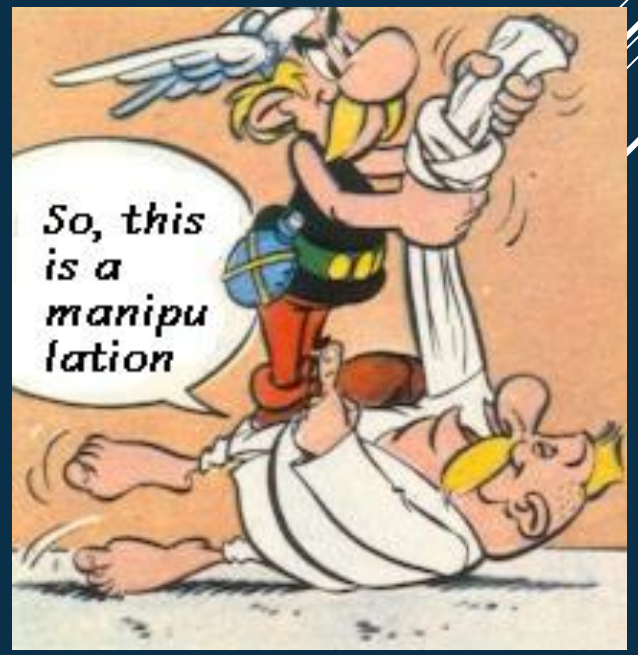
Glasziou 2010



- Intervention

In our example review of Gross et al.;

- Manips and or mobilisation cannot be used seperately only with exercises and advice.
- So multimodel therapy



Retrospective information of 2 RCT's

Manual Therapy, Physical Therapy, or Continued Care by a General Practitioner for Patients with Neck Pain

A Randomized, Controlled Trial

Jan Lucas Hoving, PT, PhD; Bart W. Koes, PhD; Henrica C.W. de Vet, PhD; Danielle A.W.M. van der Windt, PhD; Willem J.J. Assendelft, MD, PhD; Henk van Mameren, MD, PhD; Walter L.J.M. Devillé, MD, PhD; Jan J.M. Pool, PT; Rob J.P.M Scholten, MD, PhD; and Lex M. Bouter, PhD

Ann Intern Med 2002

Is a behavioral graded activity programme more effective than manual therapy in patients with sub-acute neck pain?
Results of a randomized clinical trial

Jan J.M. Pool MSc, PT, MT[# *], Raymond W.J.G. Ostelo PhD, PT[# ‡], Dirk L. Knol PhD[# o], Johan W.S. Vlaeyen PhD[† ¶], Lex M. Bouter PhD[# §], Henrica C.W. de Vet PhD[#]

- Spine 2010

Publication of design article??

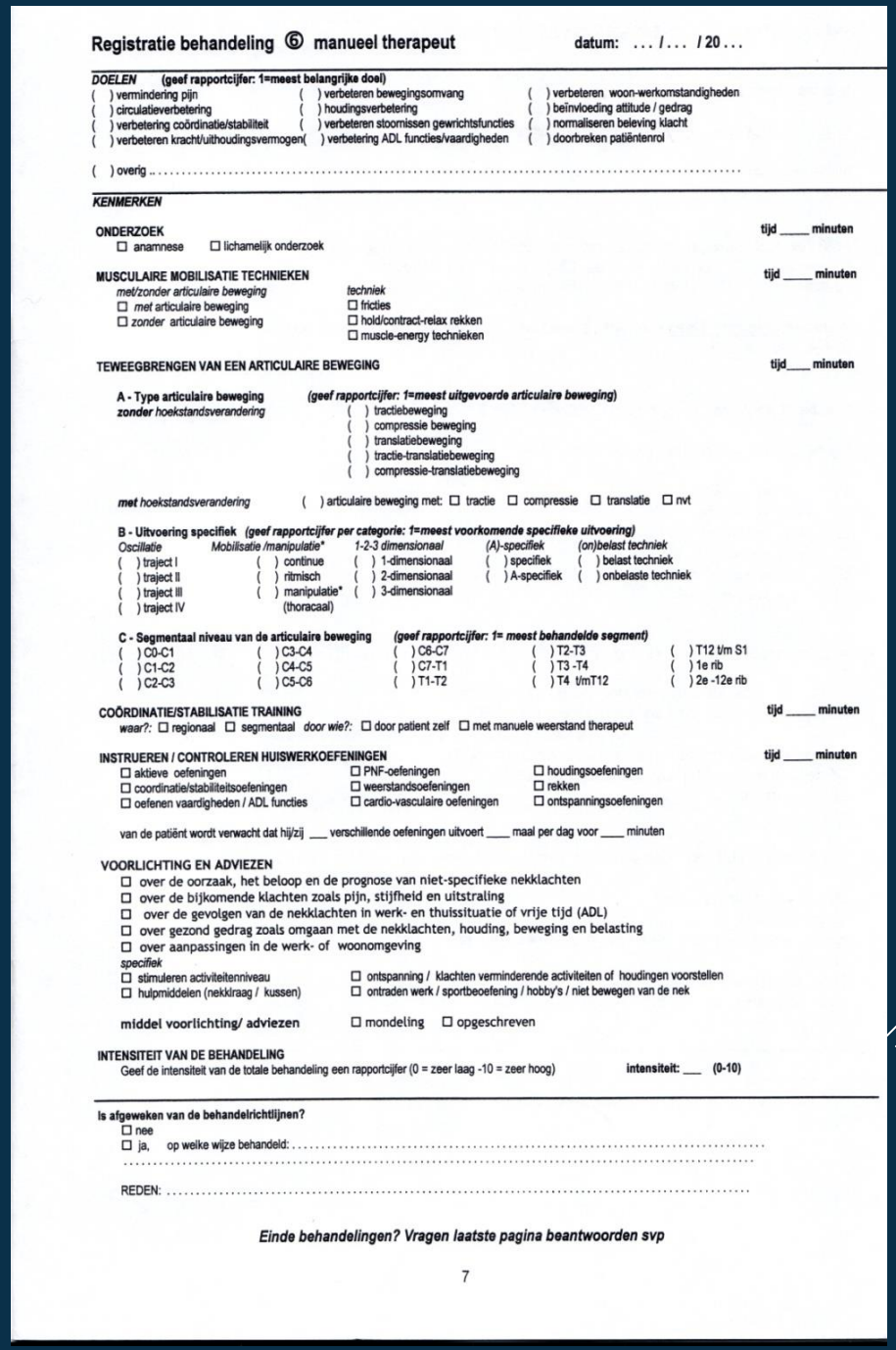
- Description of the rationale of interventions
- Definition of manips and mobilization techniques
- Description of treatment protocol

- Discussion of professional bodies manual therapy NVMT, physical therapy KNGF and General Practitioners organization

- Focus group session participating PT's and MT's

Pool JJ ,, et al. Comparison of the effectiveness of a behavioural graded activity program and manual therapy in patients with sub-acute neck pain: design of a randomized clinical trial . *Man Ther 2006 ; 11 : 297 – 305 .*

Registration of the intervention example manual therapy



Registratie behandeling ⑥ manueel therapeut datum: ... / ... / 20 ...

DOELEN **(geef rapportcijfer: 1=meest belangrijke doel)**

( ) vermindering pijn ( ) verbeteren bewegingsomvang ( ) verbeteren woon-werkomstandigheden
( ) circulatieverbetering ( ) houdingsverbetering ( ) beïnvloeding attitude / gedrag
( ) verbetering coördinatie/stabiliteit ( ) verbeteren stoornissen gewrichtsfuncties ( ) normaliseren beleving klacht
( ) verbeteren kracht/uithoudingsvermogen( ) verbetering ADL functies/vaardigheden ( ) doorbreken patiëntenrol

( ) overig ..

KENMERKEN

ONDERZOEK tijd ____ minuten
☐ anamnese ☐ lichamelijk onderzoek

MUSCULAIRE MOBILISATIE TECHNIEKEN tijd ____ minuten
met/zonder articulaire beweging
☐ *met* articulaire beweging
☐ *zonder* articulaire beweging
techniek
☐ fricties
☐ hold/contract-relax rekken
☐ muscle-energy technieken

TEWEEGBRENGEN VAN EEN ARTICULAIRE BEWEGING tijd____ minuten

A - Type articulaire beweging ***(geef rapportcijfer: 1=meest uitgevoerde articulaire beweging)***
zonder hoekstandsverandering
( ) tractiebeweging
( ) compressie beweging
( ) translatiebeweging
( ) tractie-translatiebeweging
( ) compressie-translatiebeweging

met hoekstandsverandering ( ) articulaire beweging met: ☐ tractie ☐ compressie ☐ translatie ☐ nvt

B - Uitvoering specifiek ***(geef rapportcijfer per categorie: 1=meest voorkomende specifieke uitvoering)***

Oscillatie	*Mobilisatie /manipulatie**	*1-2-3 dimensionaal*	*(A)-specifiek*	*(on)belast techniek*
( ) traject I	( ) continue	( ) 1-dimensionaal	( ) specifiek	( ) belast techniek
( ) traject II	( ) ritmisch	( ) 2-dimensionaal	( ) A-specifiek	( ) onbelaste techniek
( ) traject III	( ) manipulatie*	( ) 3-dimensionaal		
( ) traject IV	(thoracaal)			

C - Segmentaal niveau van de articulaire beweging ***(geef rapportcijfer: 1= meest behandelde segment)***

( ) C0-C1	( ) C3-C4	( ) C6-C7	( ) T2-T3	( ) T12 t/m S1
( ) C1-C2	( ) C4-C5	( ) C7-T1	( ) T3 -T4	( ) 1e rib
( ) C2-C3	( ) C5-C6	( ) T1-T2	( ) T4 t/mT12	( ) 2e -12e rib

COÖRDINATIE/STABILISATIE TRAINING tijd ____ minuten
waar?: ☐ regionaal ☐ segmentaal *door wie?:* ☐ door patient zelf ☐ met manuele weerstand therapeut

INSTRUEREN / CONTROLEREN HUISWERKOEFENINGEN tijd ____ minuten
☐ aktieve oefeningen ☐ PNF-oefeningen ☐ houdingsoefeningen
☐ coordinatie/stabiliteitsoefeningen ☐ weerstandsoefeningen ☐ rekken
☐ oefenen vaardigheden / ADL functies ☐ cardio-vasculaire oefeningen ☐ ontspanningsoefeningen

van de patiënt wordt verwacht dat hij/zij ___ verschillende oefeningen uitvoert ____ maal per dag voor ____ minuten

VOORLICHTING EN ADVIEZEN
☐ over de oorzaak, het beloop en de prognose van niet-specifieke nekklachten
☐ over de bijkomende klachten zoals pijn, stijfheid en uitstraling
☐ over de gevolgen van de nekklachten in werk- en thuissituatie of vrije tijd (ADL)
☐ over gezond gedrag zoals omgaan met de nekklachten, houding, beweging en belasting
☐ over aanpassingen in de werk- of woonomgeving
specifiek
☐ stimuleren activiteitenniveau ☐ ontspanning / klachten verminderende activiteiten of houdingen voorstellen
☐ hulpmiddelen (nekkraag / kussen) ☐ ontraden werk / sportbeoefening / hobby's / niet bewegen van de nek

middel voorlichting/ adviezen ☐ mondeling ☐ opgeschreven

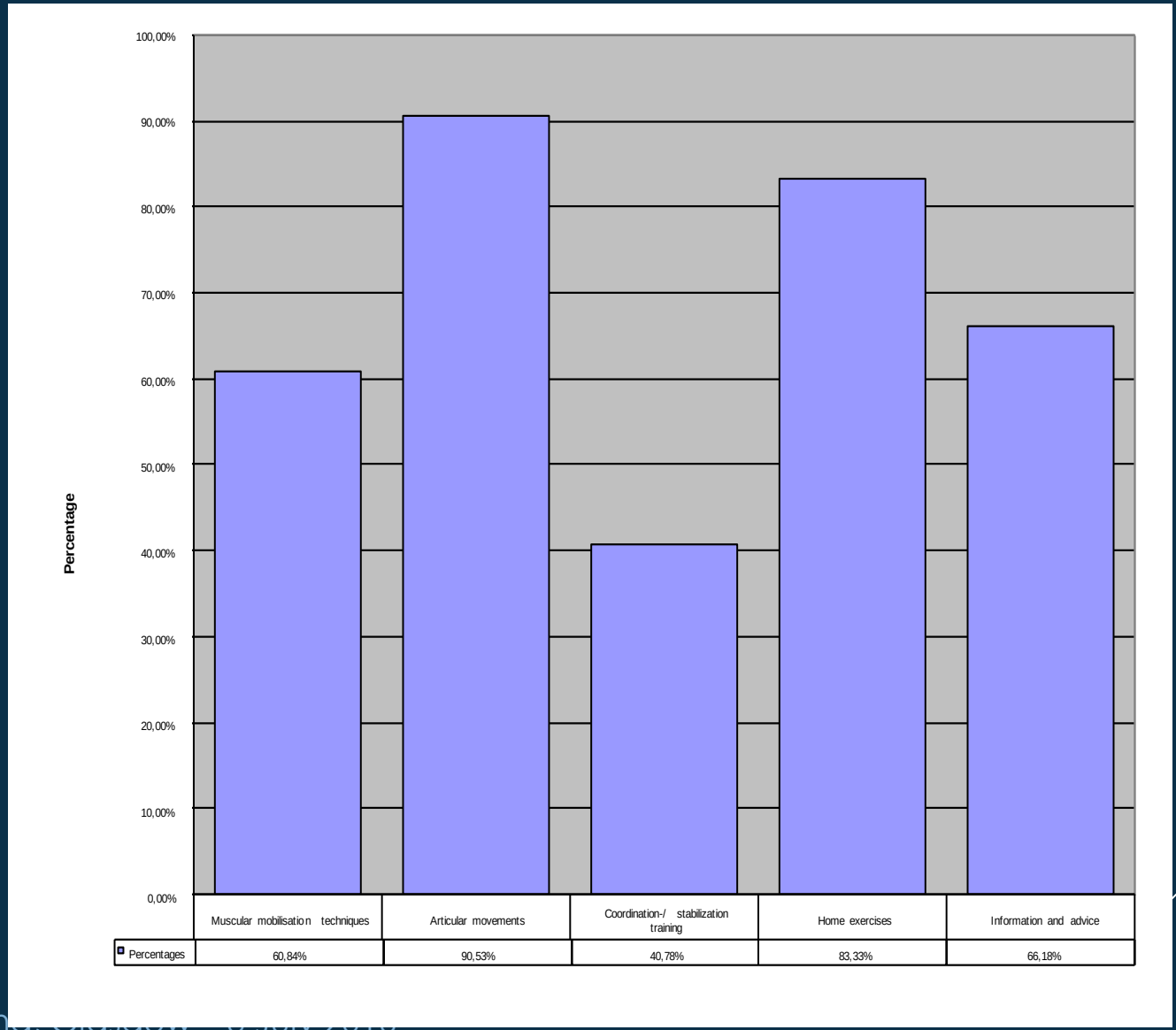
INTENSITEIT VAN DE BEHANDELING
Geef de intensiteit van de totale behandeling een rapportcijfer (0 = zeer laag -10 = zeer hoog) **intensiteit: ___ (0-10)**

Is afgeweken van de behandelrichtlijnen?
☐ nee
☐ ja, op welke wijze behandeld: .....
.....
REDEN: .....

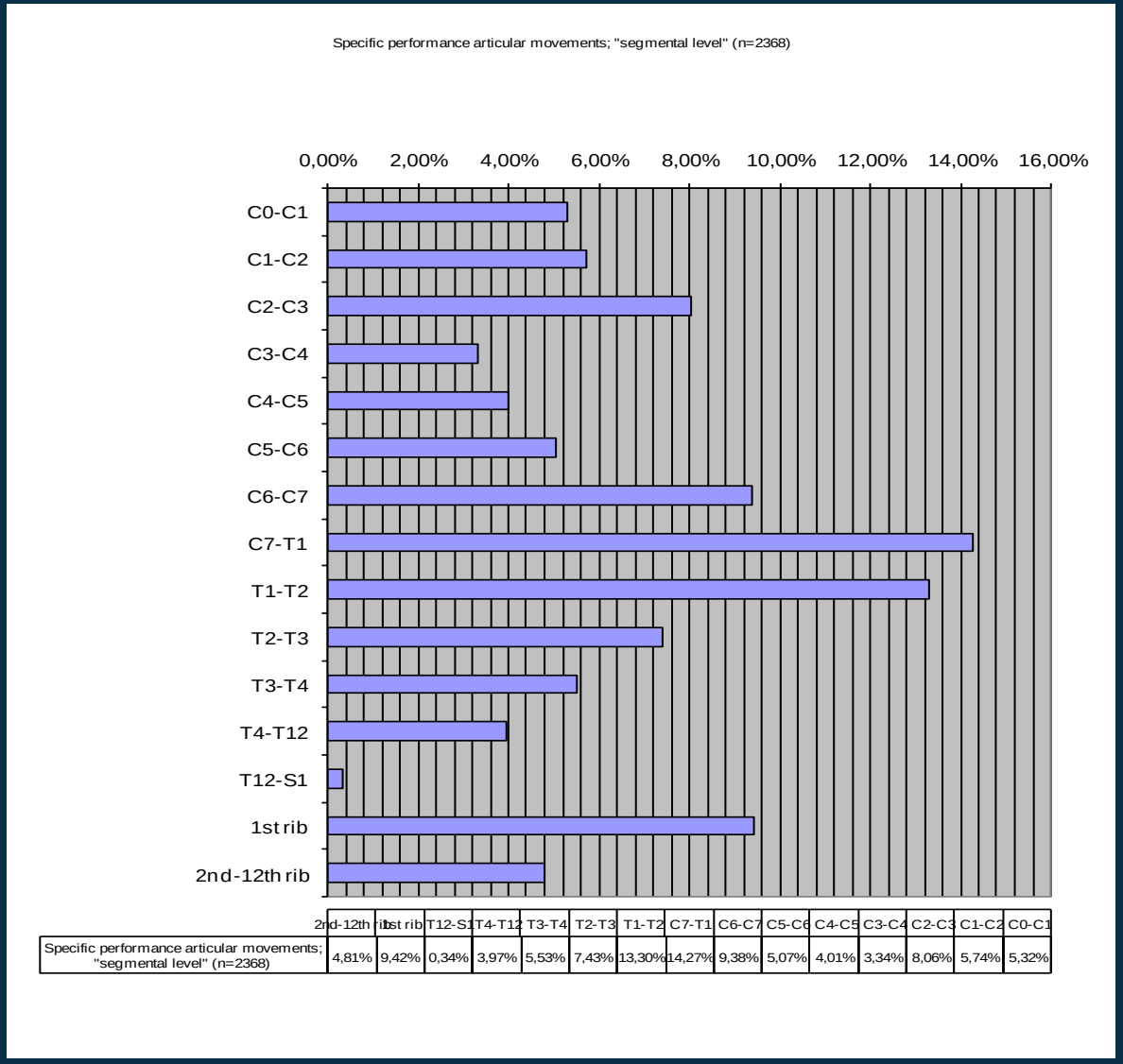
Einde behandelingen? Vragen laatste pagina beantwoorden svp

7

Which intervention performed (%) (n=618)

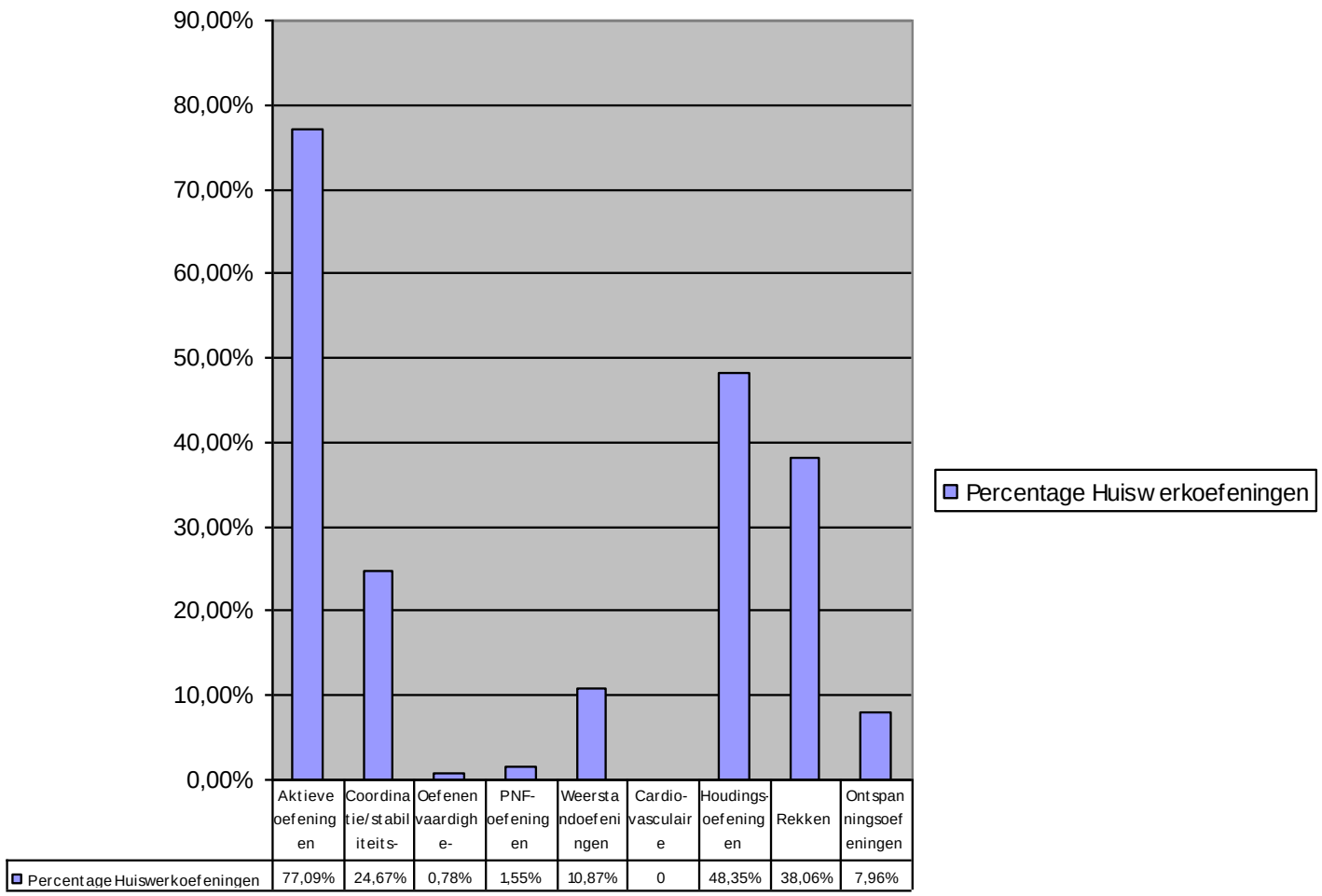


Which level (n=2368)



	2nd-12th rib	1st rib	T12-S1	T4-T12	T3-T4	T2-T3	T1-T2	C7-T1	C6-C7	C5-C6	C4-C5	C3-C4	C2-C3	C1-C2	C0-C1
Specific performance articular movements; "segmental level" (n=2368)	4,81%	9,42%	0,34%	3,97%	5,53%	7,43%	13,30%	14,27%	9,38%	5,07%	4,01%	3,34%	8,06%	5,74%	5,32%

Home exercises (n=515)

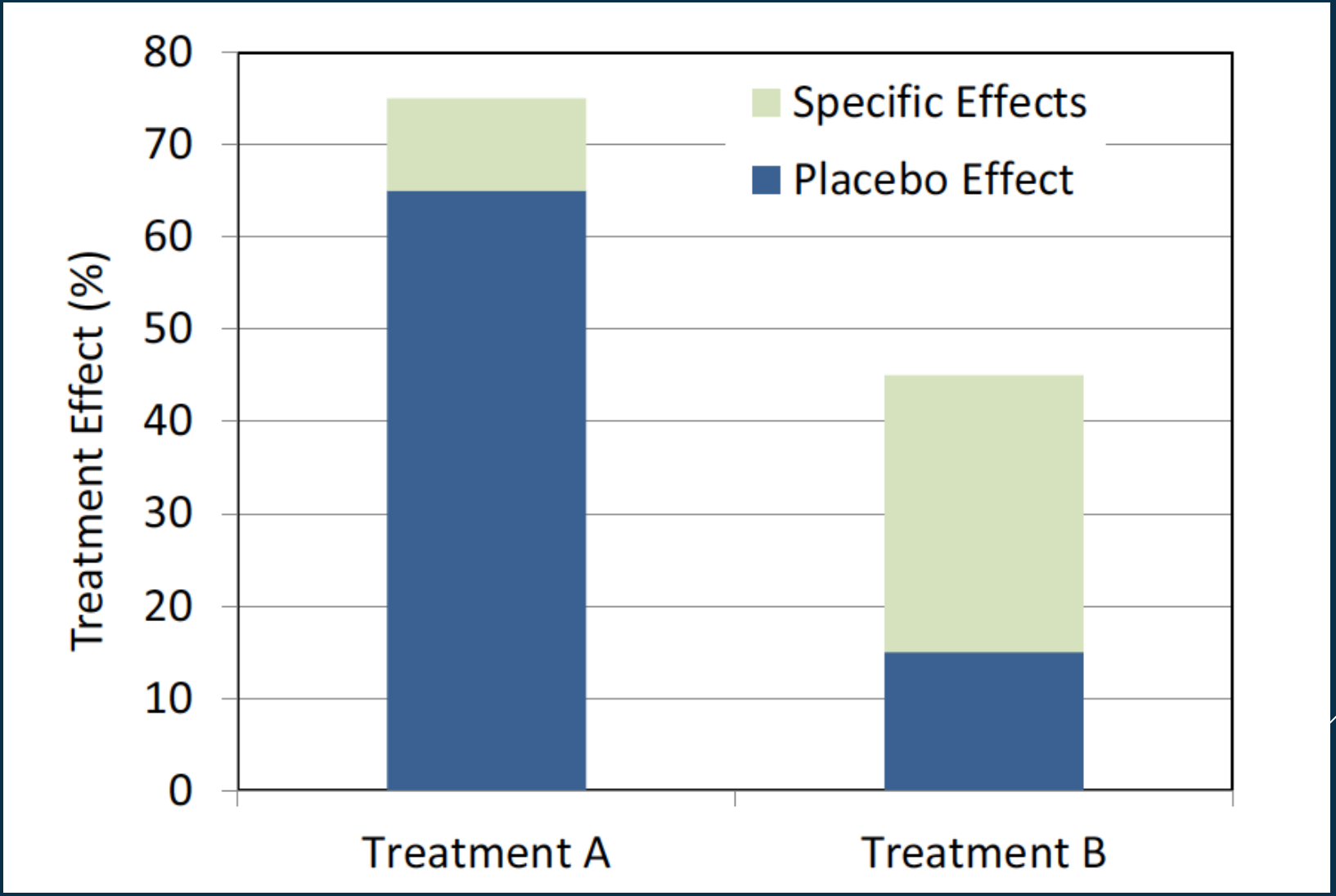


	Aktieve oefeningen	Coordinatie/stabiliteits-	Oefenen vaardighe-	PNF-oefeningen	Weerstandoefeningen	Cardio-vasculaire	Houdings-oefeningen	Rekken	Ontspanningsoefeningen
Percentage Huiswerkoefeningen	77,09%	24,67%	0,78%	1,55%	10,87%	0	48,35%	38,06%	7,96%

- Question still remains;

  - What is the relation between patient characteristics and the planned intervention
  - Which part of the intervention is responsible for the effect

BUT……


80
70
60
50
40
30
20
10
0
Treatment Effect (%)
Specific Effects
Placebo Effect
Treatment A
Treatment B

Alternative ??.....

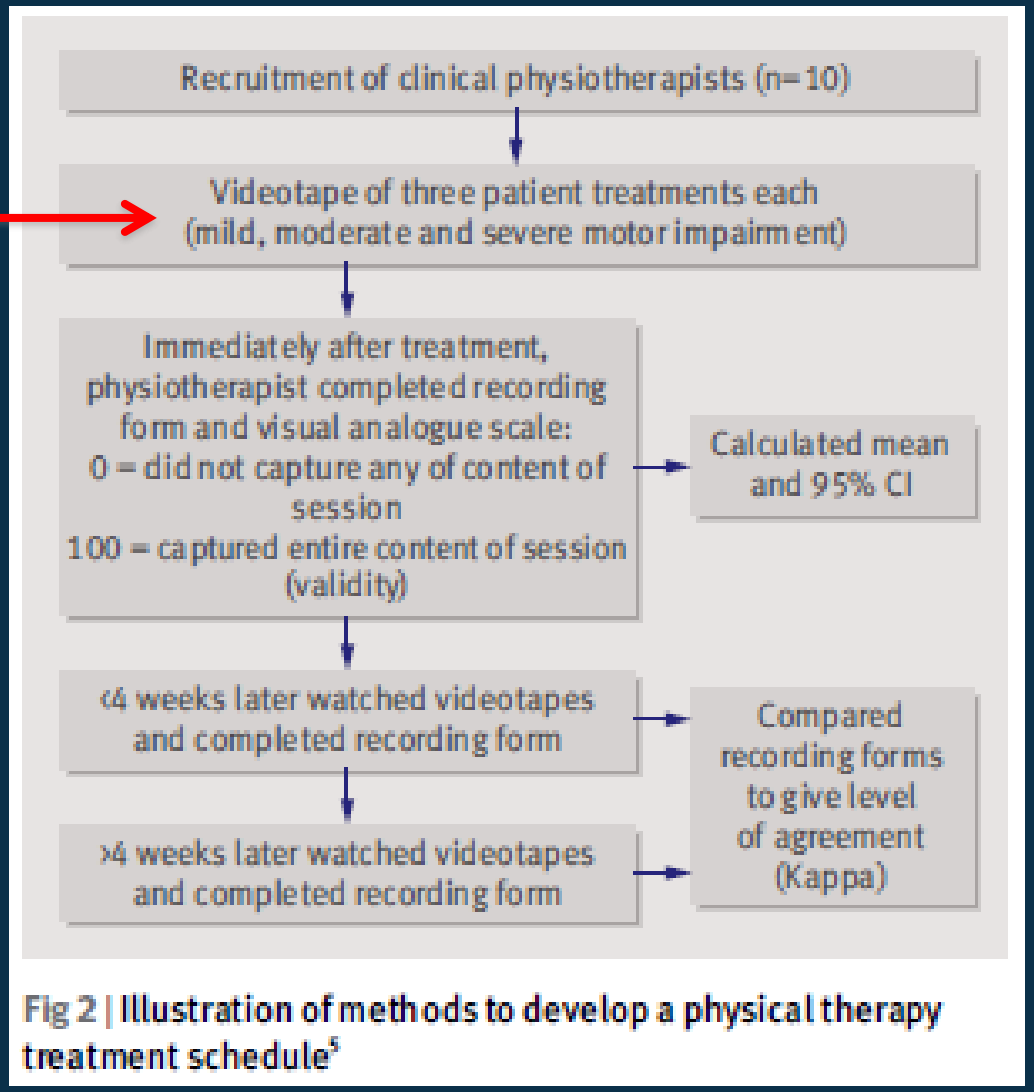


Fig 2 | Illustration of methods to develop a physical therapy treatment schedule[5]

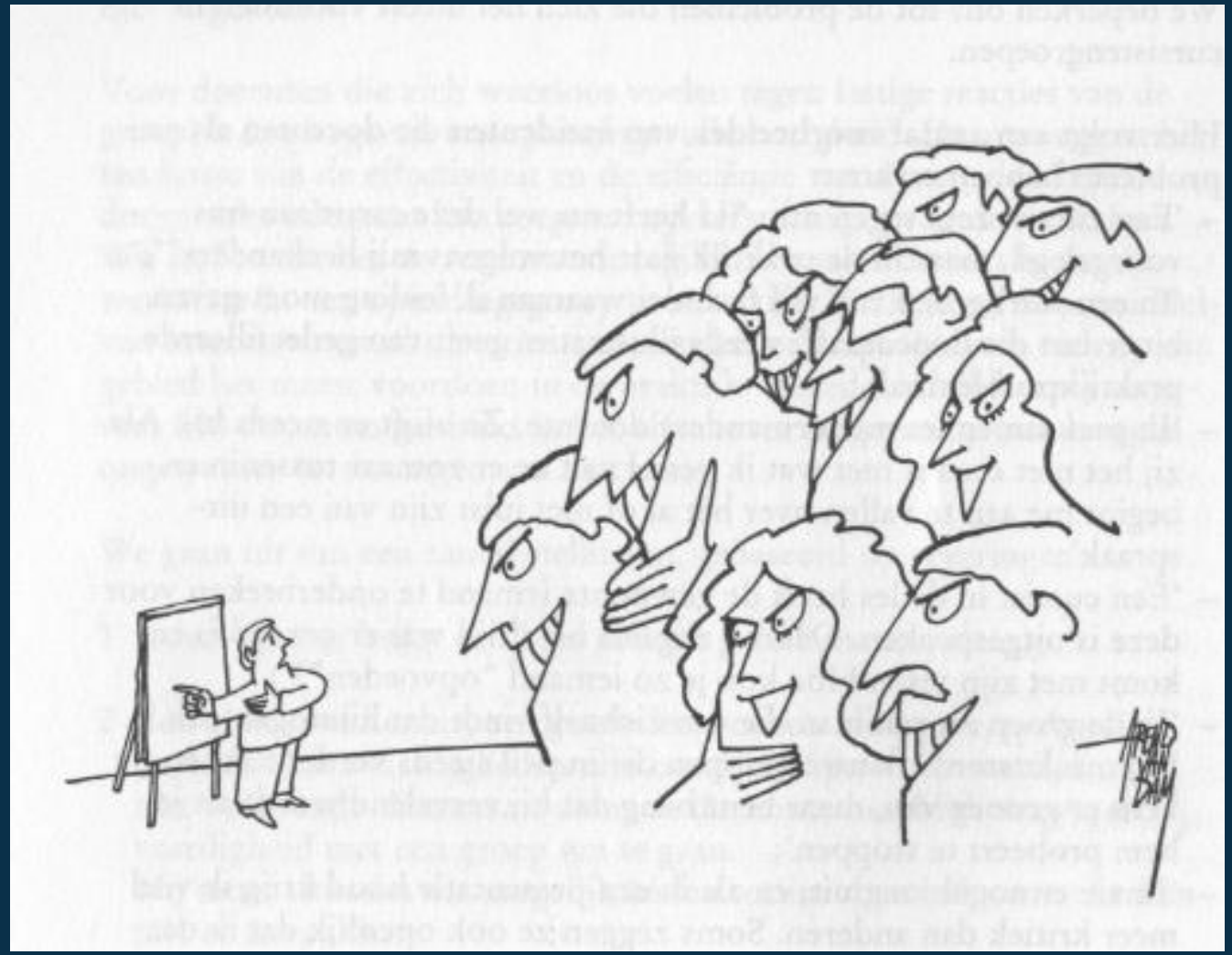
Glasziou 2010

CONCLUSIONS

Students can use information from RCT's /reviews but;

- EBP is not solely based on the outcome of RCT's and/or reviews
- Replication of intervention is a minimum requirement
- Multimodal therapy based on characteristics' of a patient and or therapist
- Alternative look on outcome is necessary

Thank you for your attention



jan.pool@hu.nl