Education as an intervention for musculoskeletal pain in children and adolescents

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Evidence-informed interventions: from simple to complex

"Complex" ← → "Simple"

"Add-ons" ← → "Essentials"

- Education to support self-management
- Exercise therapy
- Passive interventions (e.g. taping)
- Cognitive-behavorial therapy
- Interdiciplinary pain clinics
- Intensive pain rehabilitation programs (e.g. Nationwide Children's iPREP)
- +++more depending on context and situation

Need to pick the right tools to match patient needs

Ask yourself: which of these might target some of the risk factors for progression towards chronicity? Will e.g. exercise on its own target fear, anxiety or sleep?

"Education" as the foundation for moving forward

Eccleston et al. 2021 Lancet

Objectives

- Examination and history taking – new ideas to start out right (here I learned a lot) and finding targets for our "education" intervention

- Supporting self-management and improving adherence - new insights from the adolescent perspectives

- **OBS1**: Different important perspectives: adolescents, clinicians, parents and researchers
- **OBS2**: lots of data from kids with knee pain but new data suggest there are many overlaps with other pain complaints (and many have pain in more than one location)
- **OBS3**: less statistics and more clinical application

Amanda – 15-year-old runner

- She has been a "runner" ever since she was 12 and tried cross-country running
- Weekly milage varies but most around 30 km per week (in wintertime a bit more)
- In December 2019 she developed a gradual onset of knee pain (right knee)
- Not worried as she has had small niggles before (can could always keep running)
- After 6 weeks she also started to experience pain in the left knee and lower back
- Became so severe that she gradually had to reduce running

Case from one of our qualitative studies

Why did she consult us?

What are her expectations?
What are her challenges?

Expectations:

- Want to be told what to do to get better and back to running
- Getting an explanation for her pain (and also validation of her pain experience)
- Understand when she will back in full gears without knee pain

Challenges and worries

- She is worried about her knee (why do I hurt?)
- She is worried about missing practice sessions as XC championship is coming up soon
- First time she has developed so severe knee pain that she has not been able to run
- She has a friend that needed to stop running due to “poor cartilage” in the knee and she thinks her symptoms and history is identical

Keypoint

A lot of things take place during initial consultation – this is our opportunity to understand their lived experience

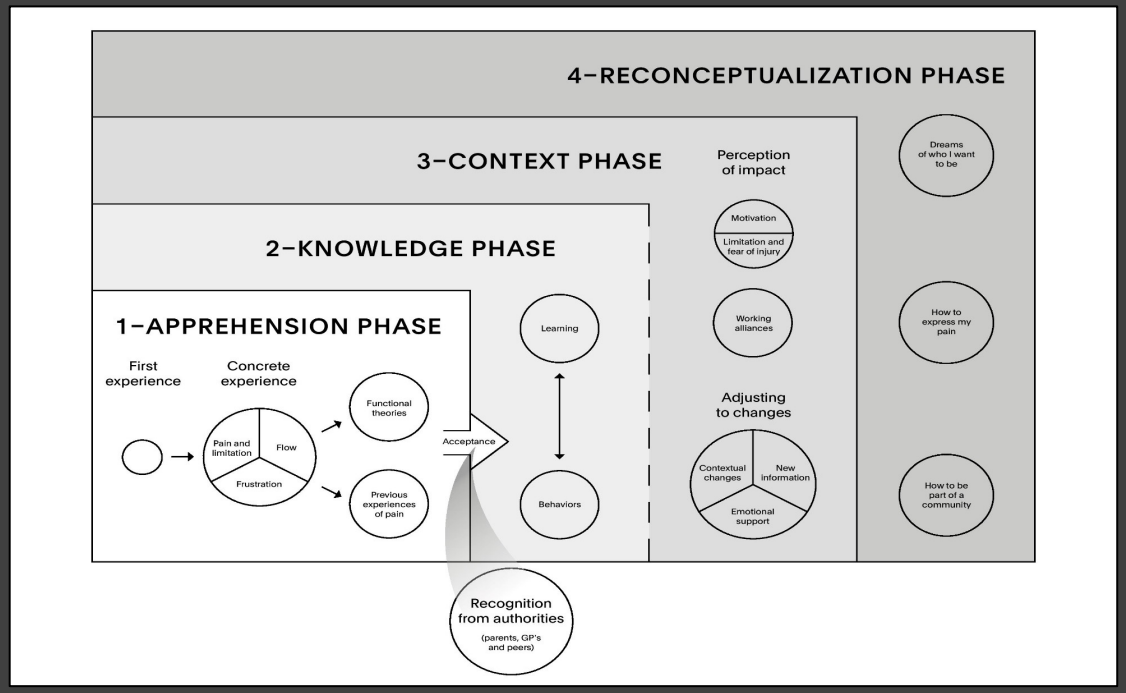
Some describe this using terms such "teachable moment" / the "Kairos moment" where change is possible and we can set them off on the right trajectory

Lawson 2008, Li et al 2013. JMIR

Understand the proces towards competency in self-management

Understand the socio-cognitive processes governing adolescents' self-management

Open-scope qualitative inquiry using semi-structured interviews to understand the experience of living with knee pain, and how it developed over time



Two potential important barriers for road towards self-management:

1: Getting a "name" (and an explanation)

2: Functional theories

Johansen et al 2021, J Pain

Evidence: What is a credible explanation to the adolescents with non-traumatic knee pain and their parents?

Records screened	Studies included
3239	16

1. Label: Have a name for their pain.

2. Cause of pain: Clear explanation for why they are in pain and what factors contribute to their experience.

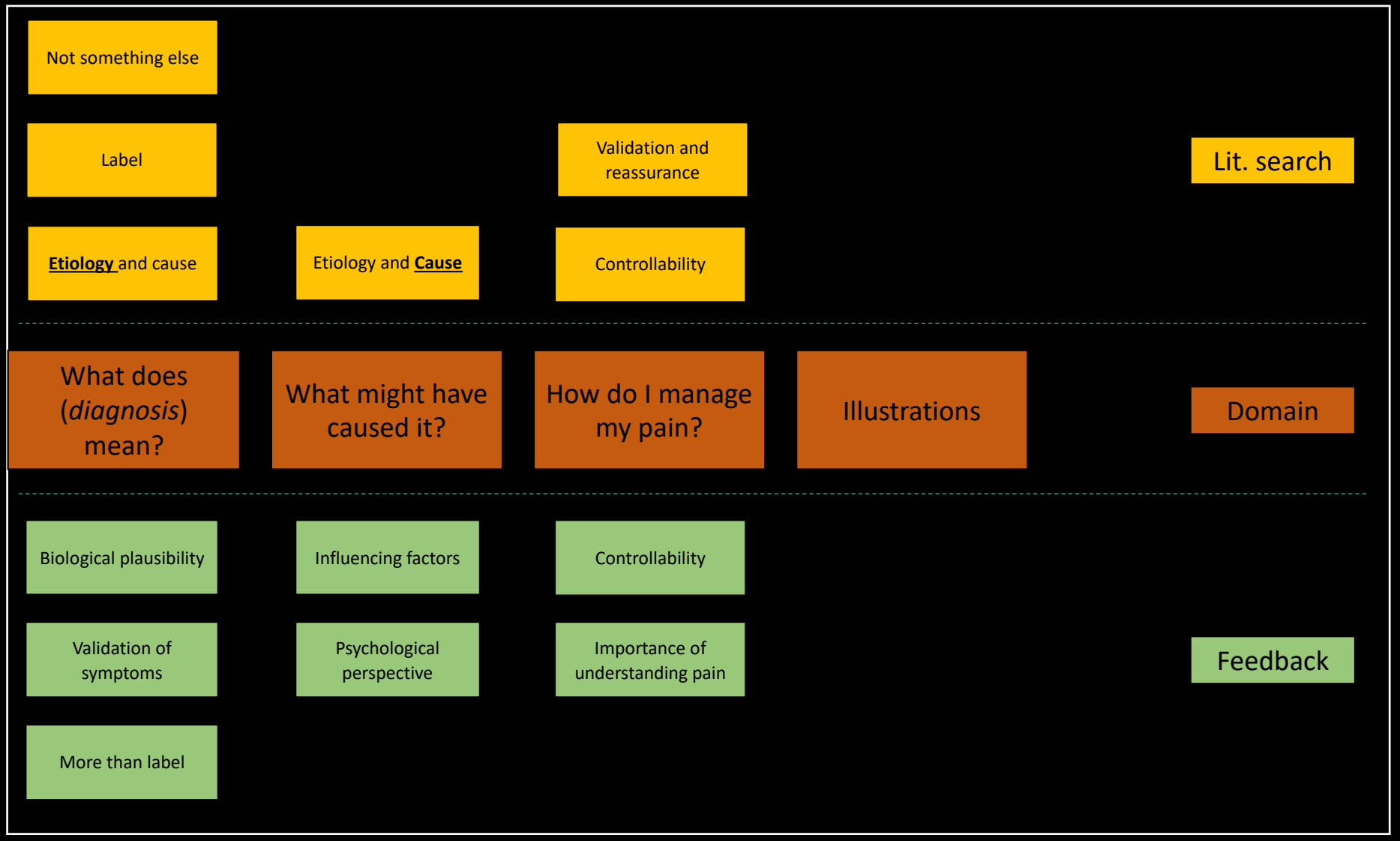
3. Validation and reassurance: Adolescents feel stigmatized for having an invisible condition.

4. Controllability: Adolescents value information regarding controllability of their pain. Has a de-threatening role.

5. Not something else: Need for explanations that rule out other diagnosis' to truly buy in, otherwise they would keep seeking explanations.

Malene Bruun Chris Djurtoft Henrik Riel

A "credible" explanation to reduce uncertainty



On-going work- beware

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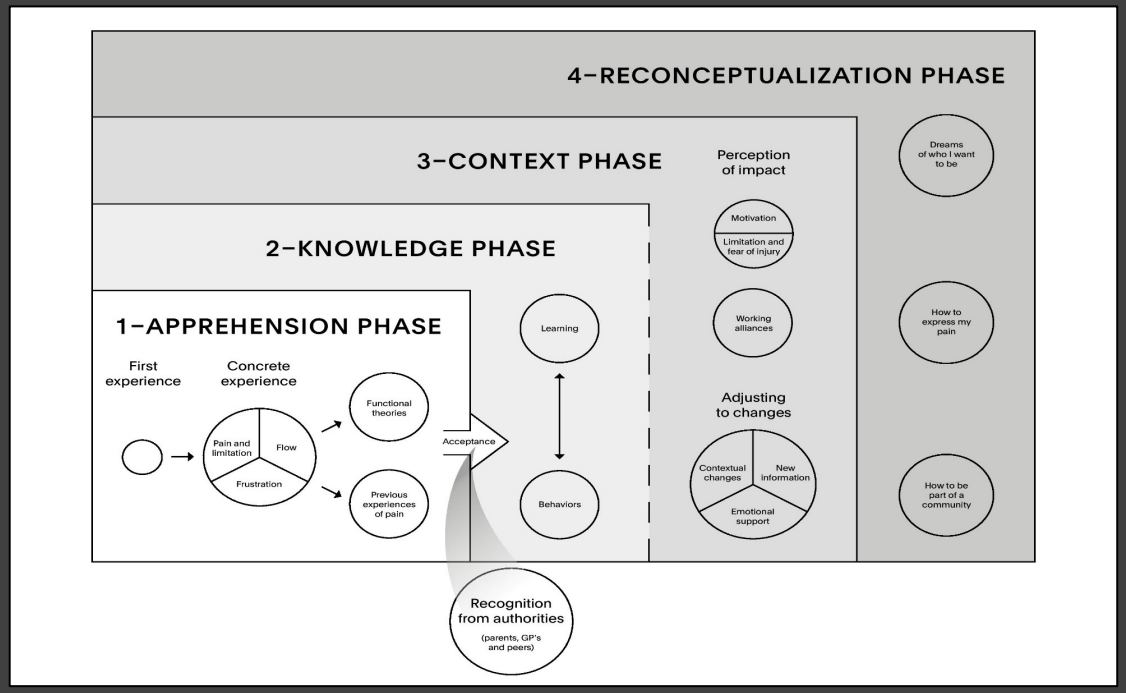

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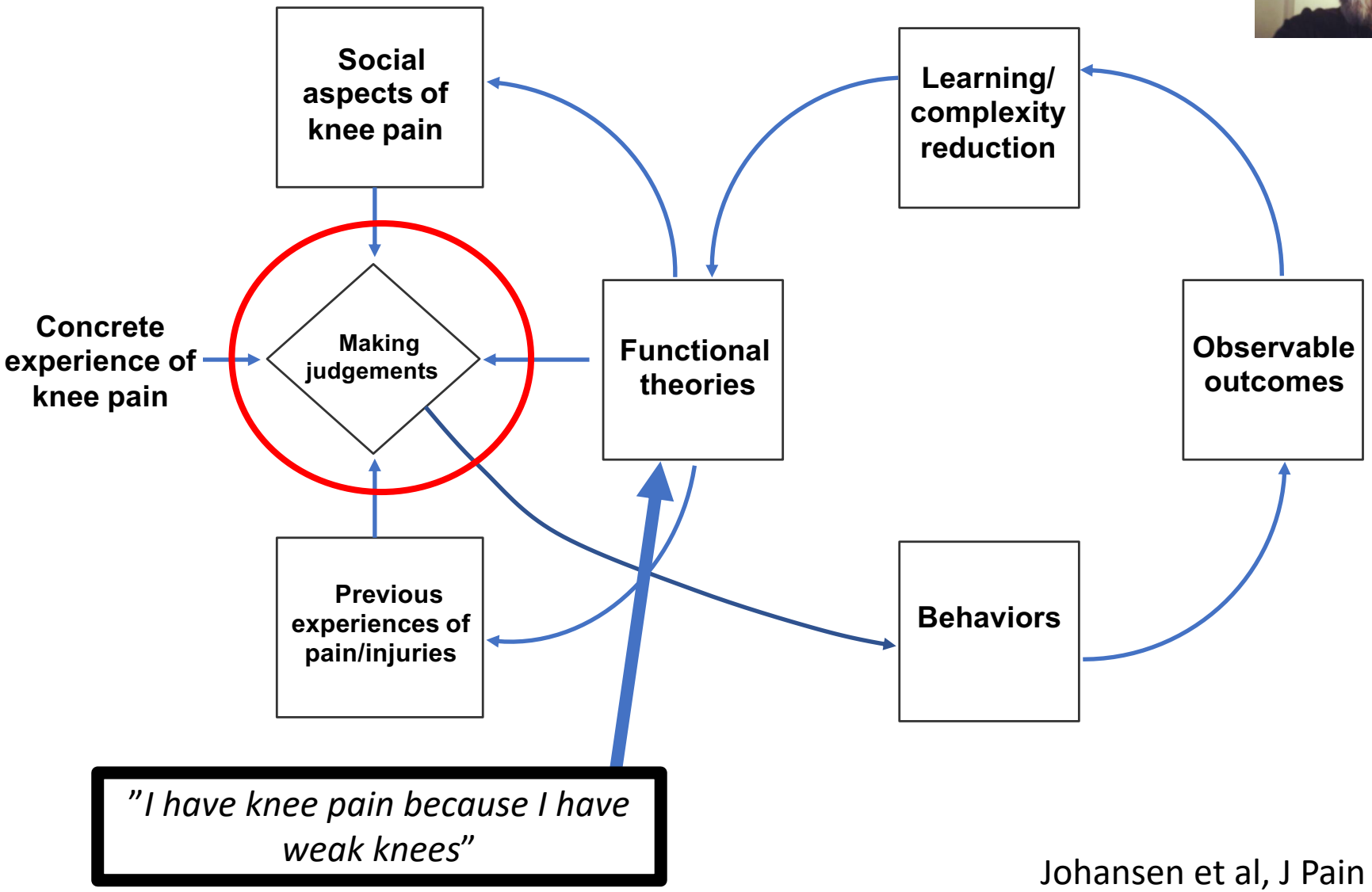
Johansen et al 2021, J Pain

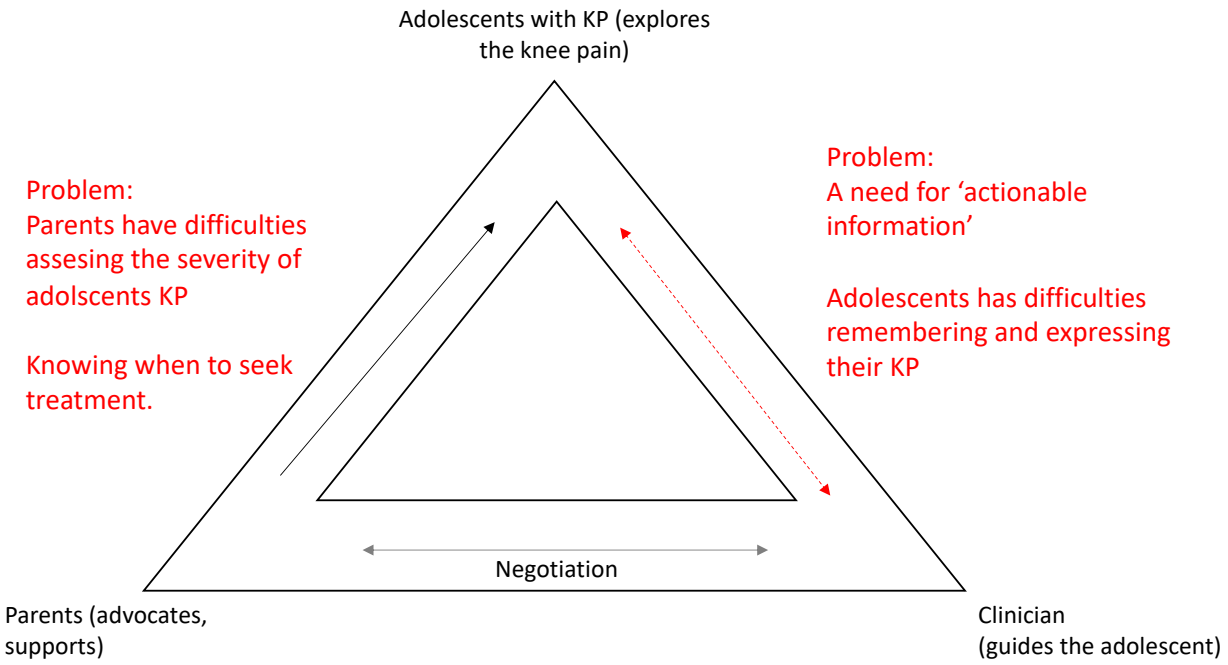
How do youth learn to self-manage and what might be barriers?



Johansen et al, J Pain 2021

What do the adolescents expect from the initial clinical encounter – and is there room for improvement?

- Future workshops with adolescents with chronic knee pain, parents and clinicians (GPs)



1. Communication
2. Being included in the consultation
3. Hard to remember – I need actionable advice I can use
4. Give adolescents a vocabulary so they can describe it to friends, teacher and coaches (and parents need to be their allied in this process)

Johansen et al. In review 2022

4 keypoints on initial consultation

A credible explanation (validation) is important. It sets them up on a trajectory to learn/take in new information

A credible examination set us up for a credible explanation

Communication is key – the adolescents want to understand (and this becomes important for them when they are in their own context)

Functional theories of pain govern behaviours (both good and bad!) – we need to listen and "poke" where needed

Education/communication becomes key to adress these

How can we support and help adolescents with MSK pain complaints?

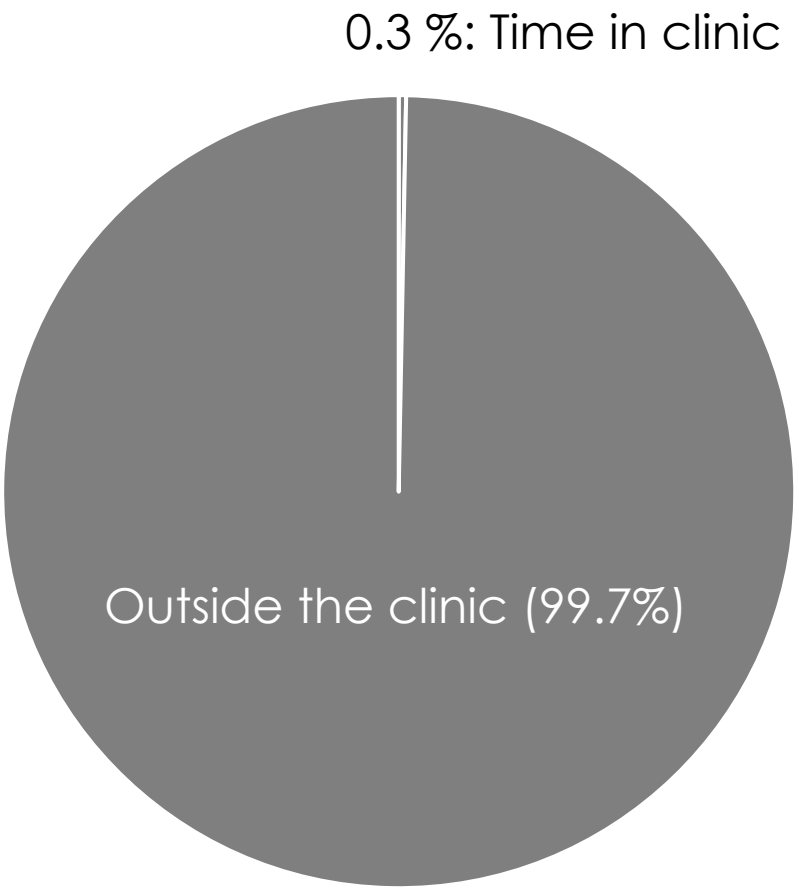
My bias: many/most non-traumatic pain complaints should/can start with a similar approach

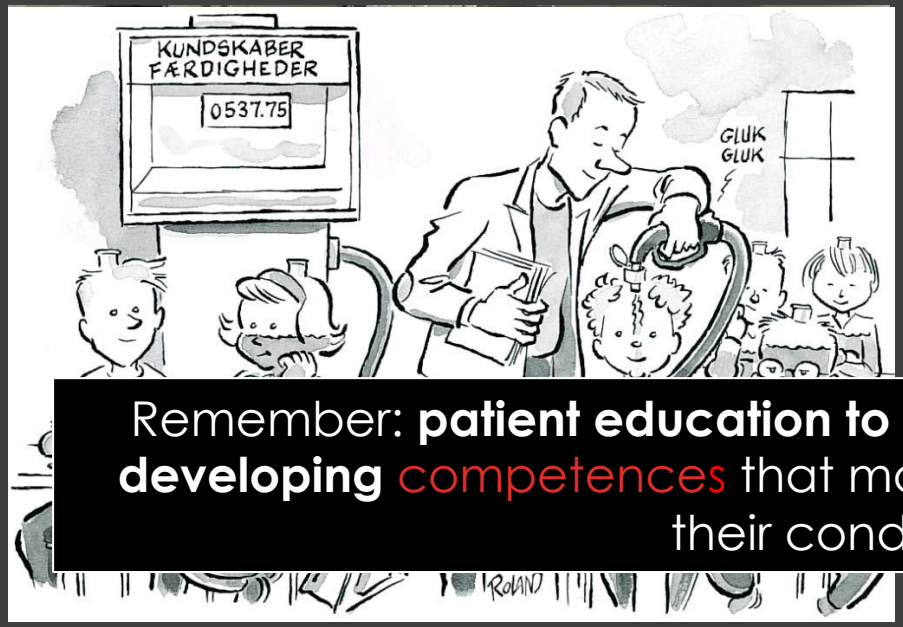
Building the case for self-management competences

4 weeks=672 hours
4 visits with a physiotherapist (45min initially, + 3 x 30min)=2h15min

On their own with family, friends, school etc: 99.7% of the time

They need be develop skills that make them (and their parents) able to make the right decisions





Remember: **patient education to support self-management is about developing** competences that makes people capable of managing their condition better

Old school / current clinical practice

- Very structured/controlled
- Teacher/clinician in charge of control/structure
- Identical curriculum and exam plan for all (not based on pupil/patient)
- The allmighty teacher/clinician that knows all
- "Tankpasser læring" (gas tank learning☺)
- Goal: qualification.

New school / what we should aim for

- Open learning environment
- Pupils/patients take ownership of their learning
- Process oriented
- Teacher/clinician designs activites that stimulate learning
- Experiental learning
- Goal: build competences

Christensen, L. (2012); Qvortrup, L. (1998)

Keypoint

Improved knowledge does not neccesarily lead to change (or ability to change) behaviour or make the best decisions for your health

Patient education to support self-management ≠ provide information and advice

A MODEL CASE: PATELLOFEMORAL *PAIN*

(potential of self-management and how we learn to self-manage)

Open access Research

BMJ Open

Five-year prognosis and impact of adolescent knee pain: a prospective population-based cohort study of 504 adolescents in Denmark

Michael Skovdal Rathleff,[1,2] Sinead Holden,[1,2] Christian Lund Straszek,[1,3] Jens Lykkegaard Olesen,[1] Martin Bach Jensen,[1] Ewa M Roos[3]

A condition commonly affect young adolescents and have a high propensity for chronicity

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Patellofer
Australia,

Natalie J Collin
Michael J Callaghan, Michael Skovdal Rathleff, Bill P Vicenzino, Irene S Davis,
Christopher M Powers,[8] Erin M Macri,[9,10] Harvi F Hart,[2,11] Danilo de Oliveira Silva,[2,12]
Kay M Crossley[2]

Open access Review

BMJ Open Sport & Exercise Medicine

Therapeutic interventions in children and adolescents with patellar tendon related pain: a systematic review

George Cairns,[1] Timothy Owen,[2] Stefan Kluzek,[3,4] Neal Thurley,[1,5] Sinead Holden,[6] Michael Skovdal Rathleff,[7] Benjamin John Floyd Dean[3,4]

- Focus on "treatments" and what should be prescribed.
- Less so on how we can support the patient in managing their symptoms
- No focus on sports activity

1. Exercise therapy is recommended to reduce pain in the short, medium and long terms and improve function in the medium and long terms.
2. Combining hip and knee exercises is recommended to reduce pain and improve function in the short, medium and long terms, and this combination should be used in preference to knee exercises alone.
3. Combined interventions are recommended to reduce pain in adults with patellofemoral pain in the short and medium terms. Combined interventions as a management programme incorporates exercise therapy as well as one of the following: foot orthoses, patellar taping or manual therapy.
4. Foot orthoses are recommended to reduce pain in the short term.
5. Patellofemoral, knee and lumbar mobilisations are not recommended in isolation.
6. Electrophysical agents are not recommended.

- Empower, explain and understand
- Aim: getting the adolescents (and parents) to take ownership and give them the tools to self-manage
- →Increase their confidence and ability to self-manage (kids+parents)

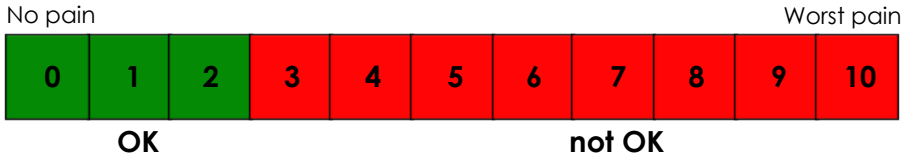
Rathleff et al. 2020 Am J Sports Med

FEEDBACK LOOP TO FACILITATE SELF-MANAGEMENT

Do it

"THE ACTIVITY LADDER"

- 1. Walking/bicycling
- 2. Fast walking/medium to hard bicycling
- 3. Slow running
- 4. Stairs
- 5. Running in medium pace
- 6. Running in high pace



How does it feel?

Rathleff et al 2019 AJSM

FEEDBACK LOOP

One specific beha
Functional theorie

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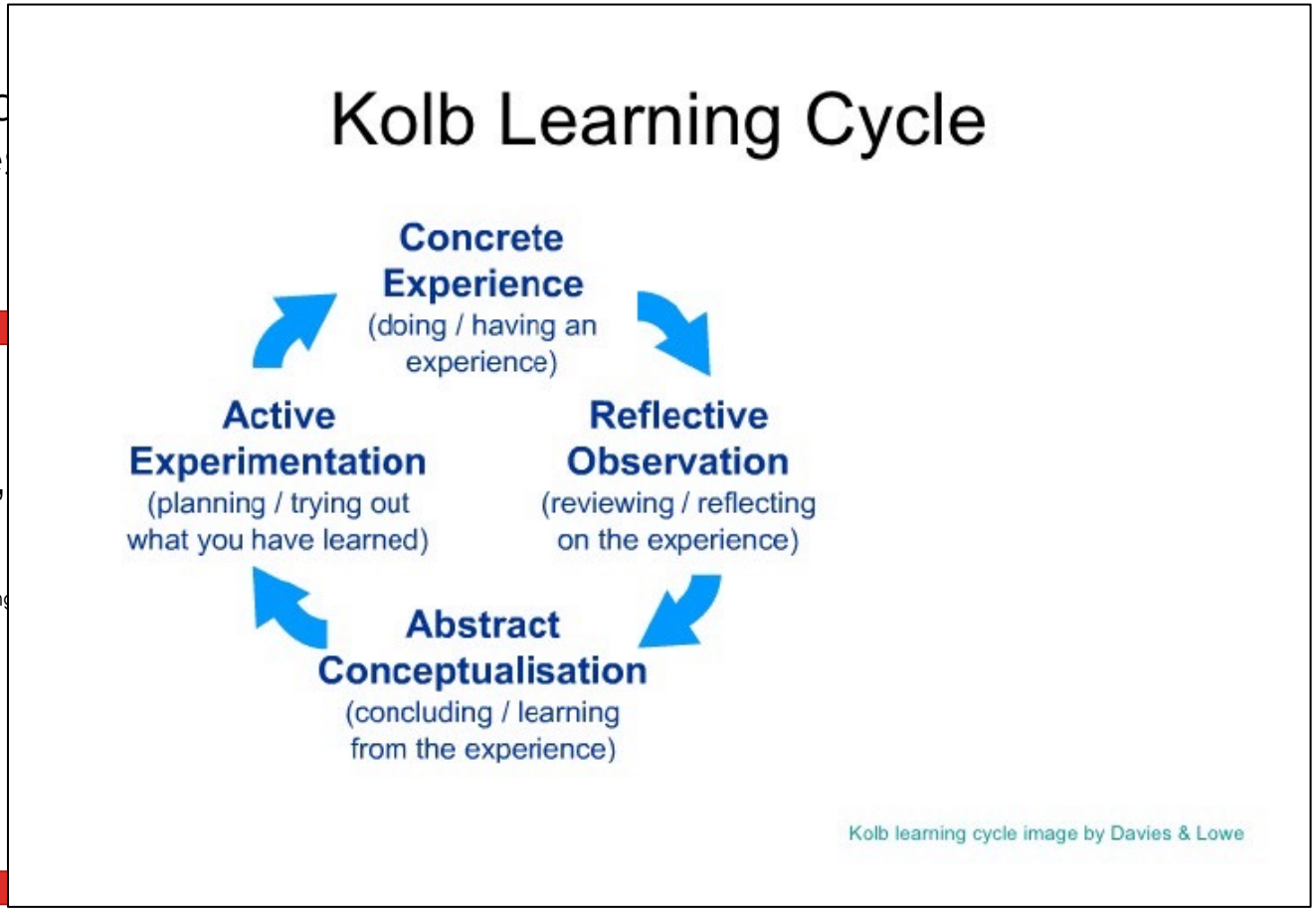


How does it feel?

Rathleff et al 2019 AJSM

Success rates after 3 months

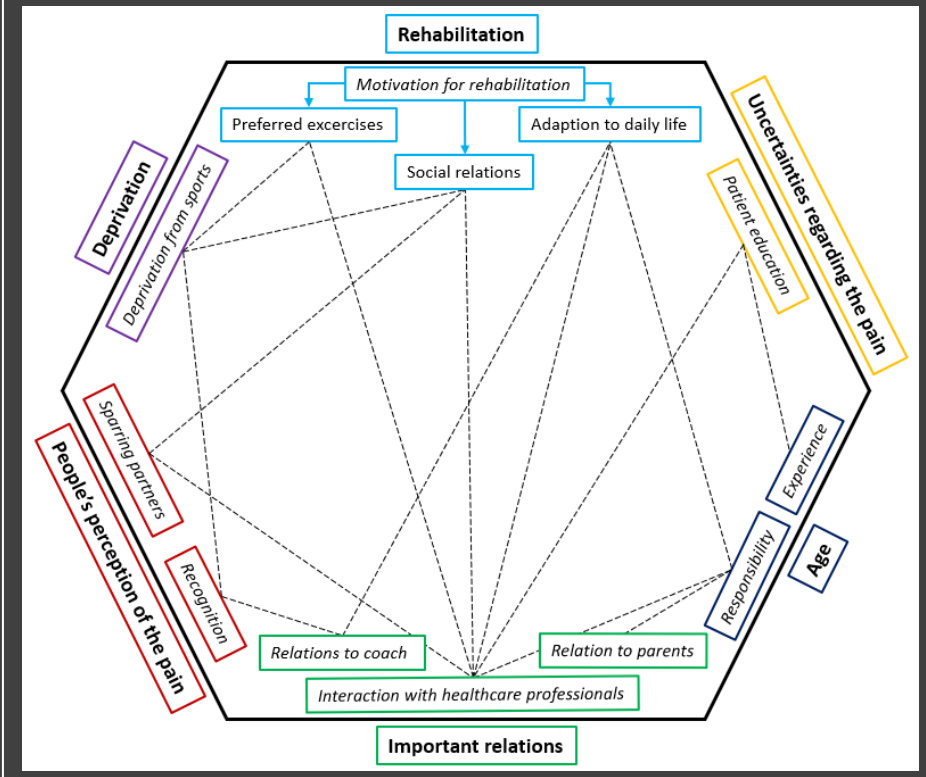
Success rates after 3 months

More info here:

WHAT CAN WE IMPROVE IF WE TAKES THE ADOLESCENT PERSPECTIVE?

Creating a theory of succesfull rehabilitation

- 9 semi-structured interviews
- Constructivistic grounded theory (good for in-depth exploration and understanding of the adolescents' views, opinions of, and experiences with rehabilitation)
- Interviews with adolescents with non-traumatic chronic knee pain
- Adolescents age 12-19

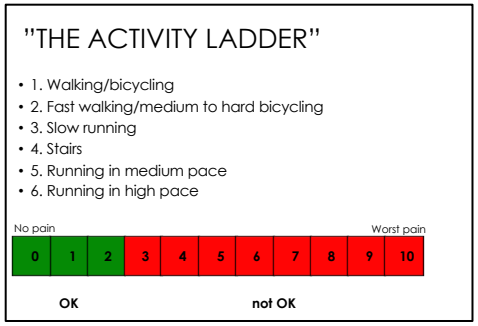


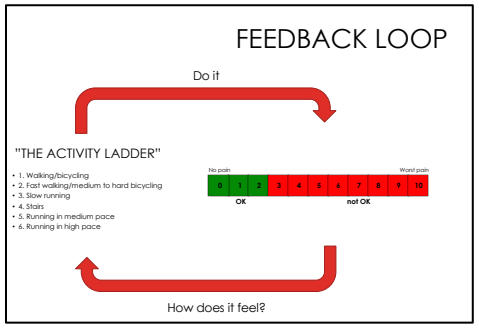



Christensen et al. 2022, in review

WHAT WE THINK IS IMPORTANT COMPARED TO WHAT THEY DESIRE

Research+clin prac





KIDS AND ADOLESCENTS

- Integration (not easy for me)
- Understanding the "why"
- Being part of a team
- Setting goals, together
- Pain and exercise
- Alliances with PT
- Groups (for some)
- My prognosis
- Progression
- Base it on preferences
- Parents and coach
- A credible explanation
- Validation & recognition
- Ownership
- Motivation/Fun

Jensen et al 2022, in review

En hjælpende hånd til behandling

Forklaring til brug af værktøj

Dette værktøj er udarbejdet på baggrund af en workshop med unge mennesker med knæsmerter og fysioterapeuter med erfaring i behandlingen af målgruppen.

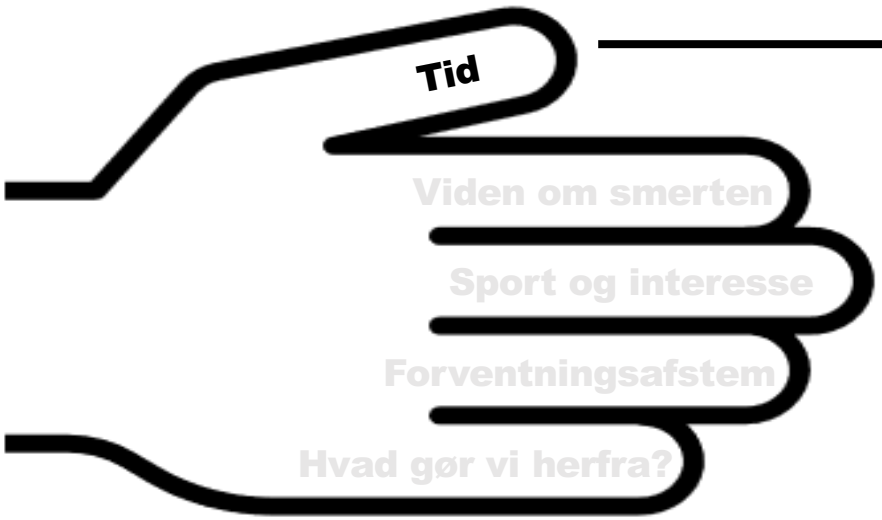
Brugen af værktøjet tager udgangspunkt i evidensbaseret praksis; hvad siger forskningen lige nu, hvilke erfaringer har du personligt og hvad er præferencerne for den, du behandler.

Værktøjet er ikke opsat som en kronologisk tjekliste, men som en ”hjælpende hånd til behandling”, der kan hjælpe med at facilitere samtaler i konsultationen – samt hjælpe med at strukturere forløbet. Du behøver derfor ikke at berøre alle fem emner – brug blot dem, der giver mening for dig i din situation.

Det anbefales at værktøjet benyttes og udfyldes i samarbejde med den unge, der behandles, for at skabe en fælles retning for behandlingsforløbet. Værktøjet kan enten udfyldes fælles via Powerpoint eller udprintet på papir.

Det anbefales at give den unge en kopi af det udfyldte værktøj med hjem.

Værktøjet er dynamisk, du må derfor gerne som fysioterapeut ændre på måden værktøjet benyttes eller tilføje/fjerne emnet, tilpasset den givne situation eller baseret på erfaring med brug af det.



Tal om hvordan hverdagen ser ud og, og lav sammen en plan for hvordan behandlingen kan implementeres med hensyn hertil.

- Benyt evt. nedenstående ugeplan til at få et overblik over skole, fritidsaktiviteter, tid sammen med venner osv.

Tal om hvordan behandlingen kan kobles med de daglige aktiviteter.

- Behandlingen kan evt. kobles med den ugentlige træning eller gåture med kammerater.

Tal om hvor meget tid man har lyst til at afsætte til behandling.

Tidspunkt	Mandag	Tirsdag	Onsdag	Torsdag	Fredag	Lørdag	Søndag

Det er vigtigt at give viden omkring, at mange aktiviteter stadig kan fortsætte.

Tal om hvad man kan i stedet for hvad man ikke kan.

- Man kan bruge disse som udgangspunkt i ”sport og interesse”.

Tal om at der ikke findes en mirakelkur og at man derfor bliver nødt til at prøve sig frem, for at finde ud af hvad der fungerer.

Lav eventuelt en video sammen hvor i forklarer mulighederne og begrænsningerne med diagnosen, som i kan vise til forældre, trænere og lærer.

Tag evt. konsultationen ud af klinikken for at møde den unge. Gå en tur, lav aktiviteter hvor den unge selv kan vise hvad der ikke gør ondt.

Gør det klart at der ikke er én måde at tilgå behandlingen på, men at der er mange muligheder. Det er derfor vigtigt at behandlingen er sjov og noget man har lyst til at lave.

Tal om og udfyld evt. de tre bokse herunder.

- Svarene til disse spørgsmål kan bruges som pejlemærke for hvad der skal lægges vægt på i behandllingsprocessen.

Hvilke aktiviteter fra fritid og sport kan stadig udføres?

_____
_____
_____
_____
_____

Hvad er virkelig fedt ved din(e) fritidsaktivitet(er)?

_____
_____
_____
_____
_____

Hvornår føler du dig god til din(e) fritidsaktivitet(er)?

_____
_____
_____
_____
_____

Tre ting vi forventer af hinanden:

1. _____
   _____
2. _____
   _____
3. _____
   _____

For at undgå misforståelser i behandlingen, anbefales det at skabe en forventningsafstemning - herunder er forslag til spørgsmål, der kan skabe dette.

- Hvis det her forløb skal være en succes, hvad skal der så ske?
- Hvad er vores forventninger til i dag?
- Hvad er forventningerne til hinanden?
- Hvornår forventer vi at kunne forskellige aktiviteter igen, som smerten begrænser på nuværende tidspunkt?
- Hvis det ønskes, kan der i fællesskab laves realistiske delmål for processen.
- Tal om, hvis processen ikke føles rigtig, at der skal findes en ny retning i fællesskab.

Benyt evt. boksen til at nedskrive det, i bliver enige om.

Tal om hvordan der bedst følges op på fremskridt i behandlingen og den overordnede proces.

Tal om hvor ofte, der er behov for skal være fysiske konsultationer.

Det anbefales at have løbende kontakt i forløbet, for at løse eventuelle problematikker og misforståelser så hurtigt som muligt.

- Udfyld evt. skemaet nedenfor for at præcisere hvordan og hvornår der følges op.

Hvordan skal vi følge op I forløbet? (sæt kryds)

- ❑ SMS
- ❑ Online videomøde
- ❑ Telefonopkald
- ❑ Fysisk møde

Hvor ofte skal vi følge op?

_____

_____

Key points

- A name and an explanation is important - **This may support adolescents directly and indirectly**
- Communication is important **(room for improvement from adolescent perspective)**
- Addressing concerns, worries, fears and functional theories of pain might be a good starting point (no matter what intervention or strategy comes after) – **exercise on its own don't necessarily address these**
- Patient education (or other interventions) to support self-management need to build competences (make adolescents capable of making decision and form positive behaviors). **Not just information from you to the patient**
- Build competences for self-management irrespective of what other components you add in the management strategy – **they need them**
- **Maybe previous self-management intervention (where education is key component) can be used in combination with "a helping hand" to support kids with chronic knee pain**

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Link for leaflets and videos: https://qr.net/HdD3g5