Virtual Relief

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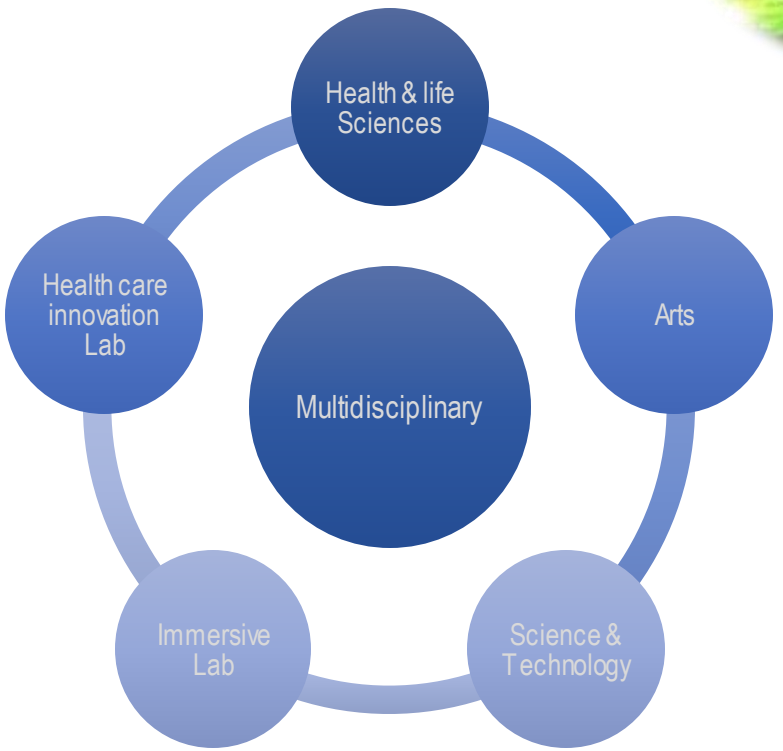
Virtual Relief

Project 2019 – 2023

Aim of the study

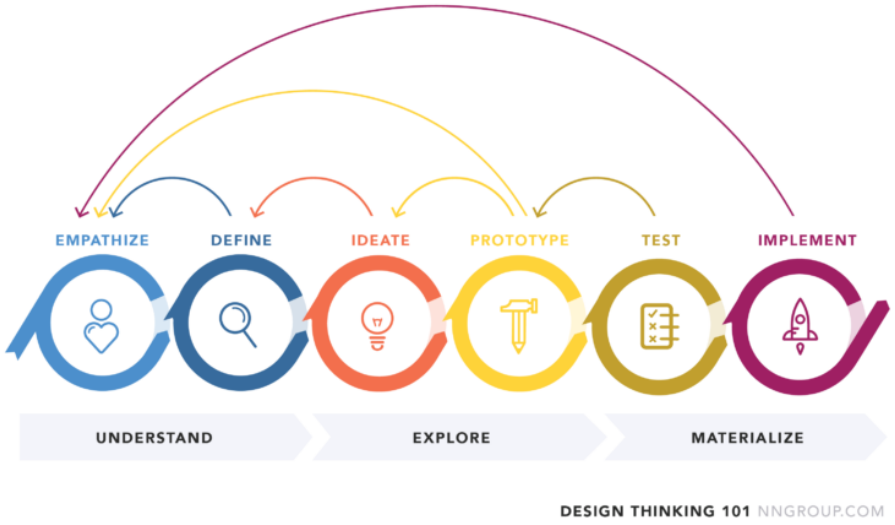
Investigate the effect of immersion, using virtual reality, on pain during labour.

- Level of immersion
- Effect on perceived pain and pharmacological pain relief
- Practical applicability



Methods (2019-2021)

- Needs assessment:
  - Phase 1 (focus groups)
  - Phase 2 (mixed method pilot study with prototype 1)



(Dam & Siang, 2019)

Virtual Reality Clinical Outcomes Research Experts Model

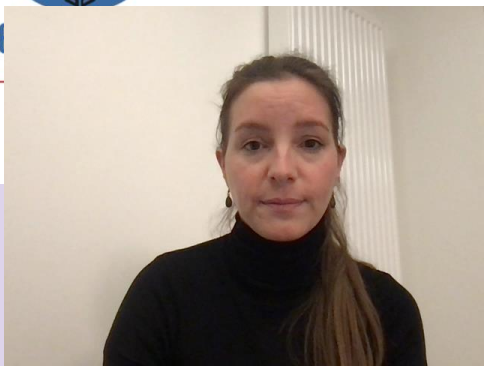
Three Phases for VR* Therapy Development and Validation

VR 1	VR1 studies focus on content development by working with patient and provider end-users through principles of human-centered design.
VR 2	VR2 trials conduct early testing with a focus on feasibility, acceptability, tolerability, and initial clinical efficacy.
VR 3	VR3 trials are randomized controlled trials that compare clinically important outcomes between intervention and control condition.

(Birckhead, et al., 20

2019 - 2020

- Literature search
- Analysis existing best practices
- Infographic hygiene
- 3 focus groups:
  1. Pregnant women
  2. Pregnant + women postpartum
  3. Caregivers

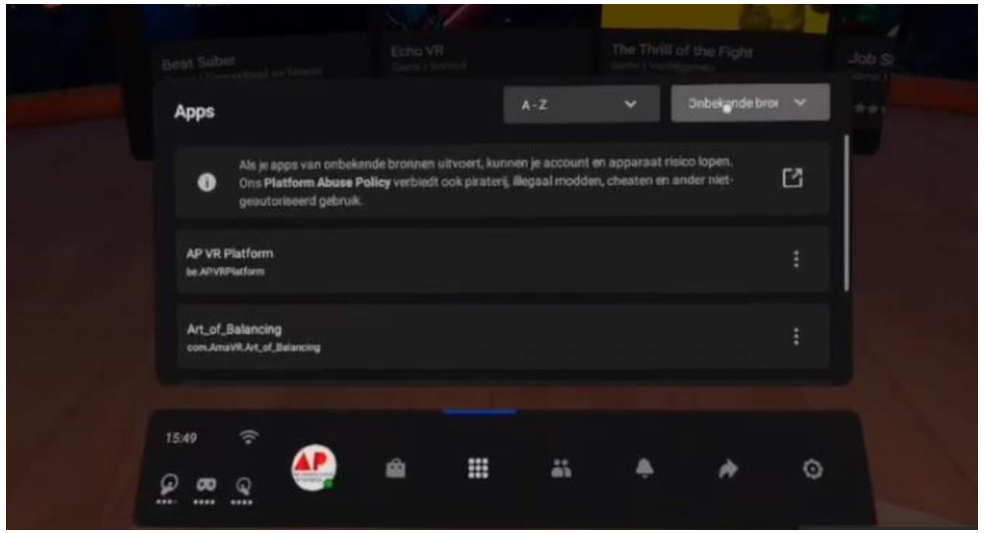


Results


Good alternative
Active experience
Self-control
Highlights focusgroups
Use during medical interventions
Immersion with sound
Not for a long time
Repetitive
Information in advance
Visualisation breath
Enough space
Action
Feeling safe
Comfortable
Nausea
Hygiene
Partner involvement
Low weight glasses
Non-disturbing
Multiple options

2020 - 2021

- Pilot study
- Quantitative and qualitative
- Prototype 1:
  - VR platform design
  - Oculus Quest



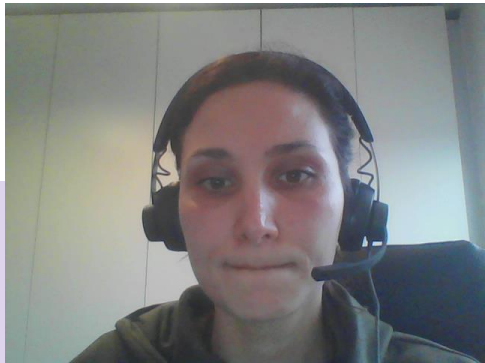
- 3 hospitals (1:3 ratio)
  - 36 VR (intervention group)
  - 109 Non-VR (control group)

- Registration pain and pain management
  - Use of epidural analgesia
  - Registration pain score (NRS) before and after use VR

Pilot study

Aim:

- Feasibility, acceptability and tolerability prototype 1
- Initial clinical effects (pain and pharmacological pain relief)



Preliminary results

- Population (most relevant)

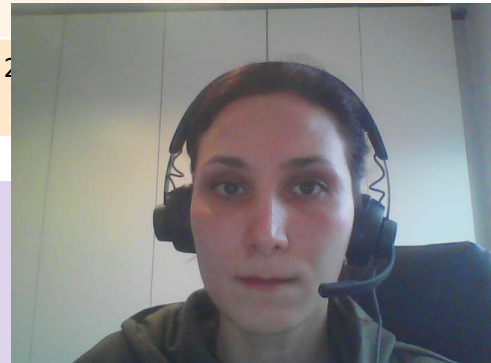
N = 146	VR (Intervention) N= 36	Non-VR (control) N= 109	P-value
Mean age (±SD)	32,92 (3,60)	30,66 (4,41)	0,006 *
Induction of labour	75,0 (27)	31,2 (34)	<0,001**
Massage %(n)	41,7% (15)	22,9% (25)	0,029**
Birthing ball % (n)	63,9% (23)	43,1% (47)	0,031 **
Birthing rope % (n)	13,9% (5)	1,8% (2)	0,003 **
Augmentation % (n)	80,6 % (29)	56,0 % (61)	0,008 **

* Independent T-test
** Pearson Chi square

No significant differences for:
- Origin
- Nationality
- marital status
- educational level
- work status
- parity (primi/multi about 50/50)
- epidural analgesia previous delivery
- wish for epidural before onset of labour

N=145	Overall	VR (n=36)	Non-VR (n=109)
No %(n)	59,3 (86)	58,3 (21)	59,6 (65)
Yes %(n)	19,3 (28)	13,9 (5)	21,1 (23)
Undecided %(n)	21,4 (31)	2	

P=0,437
Pearson Chi square



Preliminary results

- Dosage?
- Pain scores and pharmacological pain relief

	VR1 (n=36)	VR2 (n=7)
Dosage (min) mean (±SD)	25 (14)	32 (27)
Dosage (min) min-max	5 - 57	5-77

VR vs Non VR

N= 145	VR group (n= 36)	Control group (n=109)	P value
Epidural analgesia %(n)	66,7 (24)	53,2 (58)	0,158*
VT at time of epidural (cm) %(n)	4,50(1,77)	4,59(1,92)	0,85**
duration in minutes from start EA until second stage of labour (woman starts to push) mean (±SD)	300,39 (261,15)	320,37(208,16)	0,746**
duration in minutes from start EA until third stage of labour (delivery) mean (±SD)	334,67(251,44)	1933,19(11598,38)	0,503**

*Pearson Chi-Square
** Independent T-test

Before and after VR

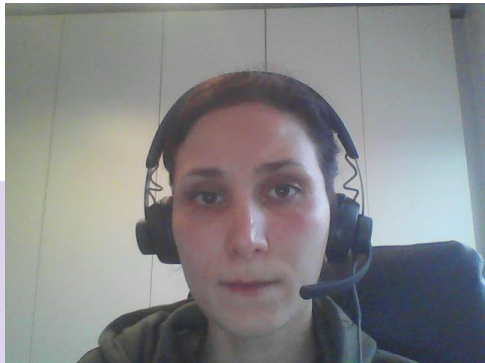
(N=36)	N	mean (±SD)	mean difference	p-value
VAS before VR1	34	4,09(2,79)	-0,265	0,436*
VAS after VR1		3,82(2,38)		

*Paired samples t-test

Discussion and conclusion

- Pilot study
  - small sample
  - Predominantly during early labour and induction
  - Dosage (10 -15 min in literature vs **25 min** in our population) (Cowles et al., 2019; Frey et al., 2019; Pratiw et al., 2017; Wong et al., 2021)
  - Only one use?
  - Most women do not wish epidural analgesia during labour at admission

- An extra alternative for coping with pain
- Usability – Feasibility, acceptability and tolerability of the prototype (qualitative data)



Thank you for listening!

- Q&A ?

- https://www.ap.be/project/virtual-relief

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Thank you for your time!

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