Hunting for effective pragmatism and implementability in child welfare and youth mental health

DISC seminar, September 29th 2022

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Agenda

1. Child welfare services and the need for implementability and pragmatism
   - Case example: Co-design and implementation of academic support in child welfare

2. School health services and system-wide implementation needs
   - Case example: Guideline evaluation and implementation mechanisms in school health services
   - Case example: Co-design and optimization of transdiagnostic mental health practices for adolescents
The Norwegian Child Welfare Services (barnevernet)

Our main goal is to ensure that children and adolescents who are living under conditions that represent a risk to their health and/or development receive the help they need when they need it, and to contribute to children and adolescents growing up in safe, secure and caring conditions.

- Children in Child Welfare at elevated risk of adverse outcomes and «falling out»
- All services should be evidence-based and tailored to individual needs
- Several well-implemented EBPs (PMTO, FFT, MST, Incredible Years++)
Support delivered by Norwegian Child welfare services

Support delivered by different types of interventions in 2019:

- **Evidence Based Programs (EBPs)**: 1085 cases
- **Advice and guidance, eclectic/unknown**: 13692 cases
- **Compensational measures and unspecified**: 28786 cases

The graph shows the percentage distribution of support and the number of cases for each type of intervention.
Why so limited EBP delivery?

Anecdotes from interviews with child welfare leaders and practitioners across Norway in 2014/2015

- Lack of time and resources
- Lack of fit
- "All" our clients have complex/multiple problems - the programs are designed for one specific problem domain
- Too costly and rigid, but some use elements of them here and there
Organizational climate in Child Welfare Services

Prior research:

- High caseloads, time pressure, and limited resources and capacity for quality improvement efforts
- Complex needs, unpredictable circumstances, large area of responsibility, constant scrutiny
- High job stress, secondary trauma, burnout, and turnover
Implementation climate in Child welfare services

\[ N = 235 \text{ Child Welfare staff} \]

Implementation climate scale (ICS) + individual readiness for change + demographics

- Norwegian translation of ICS = acceptable psychometrics
- Comparable implementation climate to Child Welfare Services in the US described as having a challenging climate

- More job satisfaction = More positive implementation climate**
  - More stress = less positive* \rightarrow \text{Could be explained by job satisfaction}
  - More tenure = less positive* \rightarrow \text{Realistic? Change fatigue? Complacent?}

\* \( p < .01 \). \** \( p < .001 \)
What about the 4%, why are they able to deliver EBPs?

- «Pockets» of specialized infrastructure equivalent to research-like infrastructure
  - Hired to deliver EBP on external funding
  - Time dedicated to deliver EBP
  - Adjusted caseloads
  - Have selected clients referred
  - External supervision and support for specific EBP
  - Time limited project funds for EBP
- Impossible to scale in all municipalities and for all needs in services
Overarching questions to explore

- How can we improve the reach and personalized precision of evidence-based interventions within current system and practice constraints?
  - Implementability and pragmatism?

- How can we study effectiveness and implementation under truly natural practice conditions?
  - Pragmatic/naturalistic research?

Common elements methodologies

Implementation science

Collaborative practice-informed R&D
The KOBA-STUDY
INTEGRATED KNOWLEDGE TRANSLATION
IN CHILD WELFARE
IMPROVING EDUCATIONAL OUTCOMES FOR
CHILDREN AT RISK

2016-2021
Children in child welfare and academic needs

- 2 in 10 complete high school on time
- Dropout high
- Marginalization high
- Academic achievement strong predictor of future wellbeing
- Protective factor against marginalization

(SSB, 2020; Kirkøen et al., 2019)
• Hybrid type 2 pragmatic RCT
• Four child welfare sites in Norway (N=270)
• Elementary school children and their families (N=104)

Protocol:
Academic achievement in our sample

Early academic struggles among children with home-based support from child welfare services

Benedicte Kirkøen\(^a\),\(^c\), Thomas Engell\(^a\),\(^b\), Ingvild B. Follestad\(^a\), Solveig Holen\(^a\), Kristine Amlund Hagen\(^a\),\(^c\)

- \(N = 104\) elementary school children
- Home-based support from child welfare
- Significantly lower scores compared peer average in reading and math
- Above 50\% in critical need of academic support or special education, less than a third received any academic support
- Psychosocial challenges
Children in child welfare services needs academic support

- EBPs available for implementation
- Needs to reach nearly all children in CWSs
- Needs to address complex needs, or be combined with other interventions
- Needs to be highly implementable

(Engell et al., 2018)
Implementability in Child Welfare Services

«The degree of ease with which an innovation can be implemented successfully in a given setting (Engell et al., 2021)»

Appropriateness?
• Relevance and fit for natural practice

Feasibility?
• Capacity/time, resources, infrastructure, organization

Acceptability?
• Do practitioners and families want and welcome this?

Usability?
• Efficiency in learning and use, ease of recall, cognitive demands, alignment with contextual constraints, error proneness

All considerations taken with sustainable implementation in natural practice in mind – not research
Reviews of academic programs for children in child welfare services
Goal:
Co-design and evaluate sustainable academic support for children and families in child welfare services

(Engell, Follestad, Andersen, Hagen, 2018)
Knowledge synthesis

- Scale up?
- Optimization?

Sustain or de-implement

- Evaluate with partners
- Sustain and improve
- or de-implement

Integrated Knowledge Translation KOBA

- Pragmatic hybrid trial
- Process monitoring
- Qualitative interviews

Co-design

- Intervention
- Implementation strategies
- Evaluation design

Implementation

- Pilot
- Gather feedback
- Adjust
- Implement

Evaluation

(Engell 2021; Graham et al., 2010)
Reduce complexity to promote implementability?

Complex EBPs

Necessary elements?

(Slide inspired by slide from Aaron Lyon, 2018)
Practice elements: *what you do*
Specific activities, actions, and techniques used to evoke or influence an outcome.

Process elements: *How you do it*
Describes how and under what circumstances practices are delivered or unfold

Implementation elements: *What made you do it*
Strategies and processes used to facilitate or enable the delivery of practice- and process elements.

- Primary school children at risk
- Outside of school hours
- Randomized and non-randomized controlled trials
- Academic achievement
Common elements of OST academic interventions:

1. Homework support
2. Training in parental school involvement at home
3. Positive reinforcement
4. Structured tutoring
5. Psychoeducation
6. Correction and feedback
7. Literacy training
8. Use of explicit goals

62 practice elements and 49 process elements in total

How most commonly delivered (process and context elements)
e.g. home visitation, role play, once a week...

In combination with what other elements
e.g. psychoeducation, feedback, group training..

For what outcomes
e.g. math, GPA, reading, parental involvement..

For whom
e.g. age, gender, type of risk..

How most often implemented
e.g., using ongoing coaching, quality monitoring..

When does it not work
e.g. inclusion in effective vs ineffective and harmful studies

More details about what likely make these practices useful:
Co-design of intervention and implementation

Facilitated teams with practitioners, former clients, and other stakeholders

- **Consensus language exercise**
  - Create glossary of key terms to use and avoid
  - Education in key concepts

- **Tailor common elements into implementable evidence-informed intervention**
  - Based on common elements
  - Feasible, appropriate, acceptable, usable

- **Develop implementation blueprint**
  - Informed by context assessments
  - Using implementation strategy tool

- **Tailor pragmatic evaluation design**
  - Naturalistic/high external validity
  - Change minimalism

Complete details on co-design process, guiding principles and recommendations for improvements, supplement here:
• **4 core elements** *(based on common elements)*
  1. Positive parental involvement in school
  2. Structured tutoring in reading and math
  3. Homework structure and routines
  4. Positive reinforcement, praise and feedback

  Each core element consist of 2-4 components/processes and adaptations alternatives

• Flexible integration in general practice over 6 months
• Primary school children and their families after school
• 14 hour dynamic training program + ongoing coaching
• Practitioner-handbook and material

(Engell, Follestad, Andersen, Hagen 2018)
Flexibility for function:

- A basic 6 session structure with individual tailoring encouraged to achieve core functions (e.g. reorder, combine, reduce, augment)
- Some pre-defined adaptation alternatives
- Eclectic/reactive adaptations encouraged if necessary
- Dynamic double-informant fidelity monitoring

Enhanced Academic Support KOBA

- Dose
- Sequence
- Adherence
- Comprehension
- Adaptations
- User-involved
- Satisfaction

(Engell, Follestad, Andersen, Hagen 2018)
**Enhanced Academic Support (EAS)**

- How implementable is EAS in general child welfare practice?

- How does intervention characteristics affect implementability?

*Exploring how intervention characteristics affect implementability: A mixed methods case study of common elements-based academic support in child welfare services*

Thomas Engell, Anne Marte Løvstad, Benedicte Kirkøen, Terje Ogden, Kristine Amlund Hagen
Mixed methods case study
N=24

Constructs:
Implementability
“The degree of ease with which intervention elements can be implemented successfully in a given context”

Appropriateness
Perceived fit, relevance or compatibility

Acceptability
Agreeableness with practitioners and clients

Feasibility
Is it doable given context and circumstances

Usability
Can it be used by specified users with effectiveness, efficiency, and satisfaction in a specified context

Instruments: IAM, AIM, FIM (Weiner et al 2017) IUS (Lyon et al., 2020); implementability of innovations interview guide

Analyses: Mix of deduction and induction, corroboration and expansion (meta-paradigmatic)
<table>
<thead>
<tr>
<th>Implementability</th>
<th>Enhanced Academic Support (EAS)</th>
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| Feasibility      | 78.54 ($SD=14.10$)            | «EAS has become a part of my practice, with the core elements, that nicely implements into working more general» |
| Acceptability    | 82.50 ($SD=18.30$)            | “Everyone should receive this, I have even used it with my own kids” |
|                   |                                | “It doesn’t add that much coming with EAS. It’s sort of, there is so many of the elements we already use in our counseling” |
| Appropriateness   | 71.88 ($SD=22.16$)            | “What’s difficult is that there are so large problems in the families, so there is so much we have to figure out and address before we can focus on EAS” |
| Usability        | 67.78 ($SD=16.32$)            | “There is nothing difficult about it, you can just adapt to the family’s needs and situations” |

$n = 24$
Intervention characteristics affecting implementability
Main takeways

• Two categories of influences: **Content** characteristics and **design** characteristics

**Content:**
• The core elements positive parental involvement in school, home learning structure and routines, and positive reinforcement were most implementable because they were **perceived as important** for clients and **compatible with existing practices, preferences, and values.**

**Design:**
• Contextual alignment and different mechanisms of 'flexibility for function' supported implementability, but...
  • Also caused concerns about intervention fidelity
  • Alignment backfired with some practitioners

• **Cross-domain flexibility essential**
  • Enabled by core elements being designed as meaningful on their own/independent of a fixed structure
  • May require more specific training and coaching
Effectiveness and value of Enhanced Academic Support
(Kirkøen et al., in review; Engell et al., in prep)

QUANT n = 82

• **The effectiveness side of the hybrid trial failed.**
  Insufficient statistical power and internal validity to test effects.
  • Mismatch between service dynamics and our research infrastructure
    • Recruitment and allocation issues
    • Low fidelity until we (too late) adapted the implementation strategies
    • Spillover effects ++

• **No significant differences between groups on any primary outcome variable**
• Higher doses of academic support associated with more favorable perceptions about value and satisfaction – for academic achievement specifically and support from CWS in general

QUAL n = 5 (probable selection bias)

• Very positive to EAS in general
• Parents report benefits for their children on academics, social coping, school attendance, wellbeing
• Parents report benefits in parental skills and involvement in school

*Success factors reported:*
• Tailoring to their needs and circumstances
• Being flexible (to emergent needs)
• Ongoing support («being there for us»)
• Home visitation

*Potential improvements*
• A core element on home-school collaboration (home-teacher relationship often key)

Not gone through peer review!
A few lessons for implementability and pragmatism

• EAS appears implementable, but needs more strategic and coordinated implementation strategies

• Designing core elements for flexible integration across domains useful in complex settings
  • More coherent services, more usability for more practitioners and clients -> reach more ppl in need
  • Tailor to address complex needs

• Too much focus on pragmatism and external validity to ensure sustainability may have paradoxically prevented the opportunity to sustain
Youth mental health

In Norway:

- Rapid increase in mental stress, decrease in mental health and coping
- Started about three to five years before covid – was exacerbated for those who already struggled
- Large population of “moderate” challenges: need for low-threshold prevention and intervention

(UngHUNT 2019; 2021)
School Health Services

- Free universal frontline service for students at primary, lower and secondary school
- Public health nurses
- Aims to promote health, health literacy, life skills, and well-being among children and youth.

**Increased focus on youth mental health**
- Limited formal mh training
- No systematic assessment or quality monitoring

**Great potential for prevention and early intervention**
School Health Services best practice guidelines

Short-term objective:
- Improve the quality of school health nurses’ consultations with youth
- Stimulate cooperation between schools and school health services
- Identify youth in need of support

long-term objective:
- Promote healthy life choices and life skills
- Improve youth health and wellbeing

Guidelines for:
- Mandatory individual consultations with all 8th graders
- Multi-leveled cooperation with schools.
The most frequent needs in school health service

1. Emotional problems
2. Family challenges
3. Complex issues
4. Social and behavioral challenges

Also prominent and often part of “complex”

- Bullying
- Self-harm
- Learning problems
- “Venting”
- Suicidal thoughts
- Identity

Coping with life stress and pressure

After covid: Increase in school avoidance/anxiety (anecdotes)

Helland et al., 2021: https://doi.org/10.52734/P43yN32q
School Health Services: how can we help?

What are they good at, and what do they need (system, service, and individual level)?

- **Pros:** Physical health, health literacy (nutrition, sleep, physical activity), sexual health, alliance with youth, salutogenesis, thinking ecologically, resolving youth conflicts/bullying, access to all youth
- **Needs:** Systematic assessment and quality monitoring, mental health practices/interventions, cooperation with schools, implementation infrastructure, leadership and climate

What can we do?

- Help implement guidelines for:
  - Best practice consultations
  - Systematic assessment and quality monitoring
  - Multi-leveled cooperation and coordination
- Implement mental health practices
• Co-creation of a multi-element implementation tool, *SchoolHealth*

• Included systematic health and life assessment with feedback, digital health dialogue and administration tool, and audit with feedback. Technical assistance and external consultation was available

• **Feasible, acceptable and useful for health nurses and youth**
  → Needs adaptations to promote cooperation with schools
Guideline Evaluation and Implementation Mechanisms in School Health Services (GuideMe)

Åse Sagatun (PI, RBUP/VID), Solveig Holen (RBUP), Annette Jeneson (RBUP), Malene Brekke (VID/RBUP) Kristin Sofie Waldum-Grevboe (RBUP), Hege Sjølie (VID), Stine Ekornes (NTNU/RKBU), Thomas Engell (RBUP).
Main aims
• Optimize (cost)effective guideline implementation strategies
• Increase knowledge about effective implementation strategies and mechanisms in school health services
• Evaluate the effects of the guidelines on school health nurses and youth

Methods
• Hybrid factorial optimization trial, cluster RCT
• Mixed-methods and meta-paradigmatic
  • Measures of intervention and implementation determinants and outcomes on multiple levels
• Investigate mechanisms using multiple methods and causal theories
Complex blended implementation strategy
- Health and life assessment with feedback
- Digital health dialogue and quality administration tool
- Audit with feedback on dialogs

- Ongoing external consultation
- Health dialogue competence modules

- E-learning modules on cooperation with schools
- Organizational tools
# Factorial RCT

$n = 1725$ participants  \hspace{1cm}  $n = 40$ schools

<table>
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<th>Experimental condition</th>
<th>Implementation strategies</th>
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<th>2. Ongoing consultation</th>
<th>3. Dissemination</th>
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Why?

The factorial trial

• Allows testing the relative and combined effects of the implementation strategies and all possible combinations

Multiple methods and paradigms

• Test and explore several implementation strategies and mechanisms from multiple theoretical perspectives (i.e., results about if, how often, how, when, where strategies work).
  • Helps optimize for cost-effectiveness and contextual differences

Optimize implementation of these guidelines

• Can provide improved infrastructure and quality for supporting youth in a life phase vital for future health and wellbeing.
When?

June 2021: Co-create implementation strategies and study design
August 2022: Data collection optimization trial
August 2023: Plan for sustainment of optimized strategies
June 2024: Analyze and publish
May 2025:

Trial registration:
Can help ensure systematic assessment, increase quality of consultations, identify youth in need, monitoring and feedback, and coordination.

Important foundational system-infrastructure… but prevention and intervention practices still needed
Early prevention of mental health problems
Co-design and optimization of brief transdiagnostic mental health practices for adolescents (Kort)
Our adjusted approach to collaborative R&D

New additions:
- MOST framework (Collins et al.)
- USE-EBPI framework (Lyon et al.)
- Experience sampling (e.g., EMA)
How we present it to partners

Finding ingredients (theoretical development) 2021/2022

Many different chefs cooking together (co-design) 2022/2023

Tasting, refinement, and seasoning (experimental testing) 2024-2026
Aims and procedure

- Co-design brief transdiagnostic practices targeting adolescent emotion regulation strategies
  - Based on common elements reviews
  - Conceptual models and causal diagrams
  - Rapid cycle prototyping
- Evaluate implementability and effects on proximal functions and outcomes
  - Make refinements based on results
  - Decide optimization needs (define experimental factors)
- Evaluate effects and optimization through a factorial RCT
**WP1: THEORETICAL PREP**
Develop conceptual model of evidence-informed practice elements
Develop theory of change and causal diagrams for each element

**WP2: INTERVENTION AND IMPLEMENTATION PREP**
Intervention co-design and rapid cycle testing with adolescents and practitioners
Co-design implementation strategies
Implementability study (practitioners: n=20, adolescents: n=40)

**EXPECT INTERVENTION TO BE EFFECTIVE AND IMPLEMENTABLE?**
- Yes
- No

**WP3: OPTIMIZATION OF INTERVENTION**
Dismantling trial of core elements (practice and/or process or implementation strat.)
Factorial experiment (schools: n=25/adolescents: n=512)

**OPTIMIZED INTERVENTION EFFECTIVE AND IMPLEMENTABLE?**
- Yes
- No

**SUSTAIN AND PREPARE FOR SCALE**
Figure 3.
Wellbeing and Illbeing – A Structural Model

(Esben Røysamb & Ragnhild Bang Nes, 2018)
INTERNALIZING

EXTERNALIZING

THOUGHT DISORDERS

THE P-FACTOR
What is p?

- Neuroticism or negativ emotionality
- Poor impulse control over emotions
- Deficits in executive functions such as attention and concentration
- Distorted form and content of thought
p and emotion regulation

«Emotion regulation is the process by which people modify the intensity or duration of their emotions»

Behavoural avoidance
Distraction
Rumination
Worry
Acceptance
Distress tolerance
Problem solving
Reappraisal

Emotion regulation as a transdiagnostic factor in the development of internalizing and externalizing psychopathology: Current and future directions

AMELIA ALDAO, DYLAN G. GEE, ANDRES DE LOS REYES, and ILANA SEAGER

Ohio State University; Yale University; and University of Maryland at College Park

Two systematic reviews (one not published yet)

Mental health interventions measuring change in emotion regulation

55 studies

Common elements analyses and meta-analyses

16 practice elements advanced to co-design workshops

- Process elements (format, structure, mediums, context etc.)
- Implementation elements (too poor reporting)
Meta-regressions of elements for emotion regulation

1. Significant difference in effect between studies with and without an element
   - *Psychoeducation about acceptance* (difference in $d = .58$, 95% CI [.09, 1.07], $p = .021$)
   - *Mindful goal setting* (difference in $d = .40$, 95% CI [.09, .70], $p = .012$)

2. Meaningful difference in effect size > .20
   - Alternative actions to emotional avoidance
   - Downregulation of negative emotions
   - Exposure to emotions
   - Self-exploration of thoughts and feelings
   - Teach cognitive flexibility
   - Evaluating consequence of behaviours
   - Practicing awareness (mindfulness)
   - Psychoeducation about self-esteem and self-worth
   - Psychoeducation about stress
   - Increase positive health behaviors/activities
Core elements of KORT

1. Idiosyncratic goal setting and follow up

Exploring

- 2. Emotions and thought patterns
- 3. Positive health behaviors and activities

Practicing

- 4. Exposure to emotions
- 5. Psychological flexibility
- 6. Mindfulness exercises
- 7. Stress management

Acceptance and awareness

Everyday implementation
Understand strengths and needs

Adaptive expertise
- Flexibility
- Metacognition
- Strength-based

Co-select and tailor practices

Implement and adapt

Adapted from Chen et al. (2021): Intensifying interventions for students with EBD
Rethinking the translational continuum

Some solutions already here?
- Scientific theory, policy, and administration?
- Policy, system, and service design?
- **Implementability in practice as a guiding modality alongside effectiveness?**

We need:
- More pragmatic studies
- More practical impsci and tools
- More impsci dissemination
Yes, but…

(Often too late?)

(Glasgow, 2013; Lyon, Comtois et al., 2020; Engell 2021)
Global forum for everyone who is interested in implementation science and practice

Norwegian Network for Implementation Research (NIMP): facebook.com/groups/nasjonaltimpl ementeringsnettverk

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