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## **Navigating the complexity: unraveling the implementation of youth care guidelines**

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# Chapter 6

## General discussion

## General discussion

Implementing guidelines in youth care presents significant challenges. Suboptimal implementation may lead to critical issues being overlooked, inaccurately assessed, or neglected as well as a waste of scarce resources, such as time, staff, and funding, which are not utilized effectively. Ensuring early identification and intervention is crucial to safeguarding children's wellbeing and mitigating long-term problems. This dissertation sought to unravel the complexities of implementing youth care guidelines and in particular targeted at domestic violence (DV) and child abuse and neglect (CAN). In this final chapter, we will first summarize the findings of the thesis and reflect on the thesis's research objective. We will discuss the lessons learned, offer practical recommendations for improving guideline implementation, and suggestions for future research.

### Main findings

#### Implementation determinants

Implementation determinants are factors that influence whether, how and to which extent guidelines are put into practice. Understanding these determinants is crucial for developing tailored strategies to improve guideline implementation and care quality. In **Chapter 2**, we examined determinants related to DV and CAN guidelines. The availability of resources emerged as the most important determinant influencing guideline implementation. CPs frequently cited time constraints as a major barrier. They explained that their demanding workload made it difficult to fully integrate CAN and DV guidelines into daily practice. The time required to address situations where clients disclosed issues or CPs identified problems further compounded these constraints. Additionally, determinants relating to guideline knowledge, self-efficacy, and communication skills also emerged as important. CPs reported uncertainty about the diagnosis or felt they did not have the skills to perform the guidelines, particularly concerning communication skills. Other determinants included guideline complexity and cosmopolitanism (i.e., inter-organizational networks). Although most determinants were comparable between DV and CAN guidelines and between quantitative and qualitative research methods, some differences were observed. In **Chapter 3**, we asked implementation experts in the context of youth care to rate the relevance of implementation determinants in terms of their importance and changeability. Experts considered knowledge of guideline use and communication skills as most relevant, similar to the perspectives of CPs. Other relevant determinants involved engaging both management and CPs in the implementation of guidelines, focusing on promoting guideline use, mandatory education, the presence of implementation leaders, and management support. CPs and experts may view relevant implementation determinants from different perspectives. CPs focus on practical aspects of guideline implementation, while experts emphasize strategic elements and the broader context needed for effective implementation.

**Chapter 5** demonstrates that implementation determinants do not function in isolation; instead, they interact and influence one another in shaping the implementation process. Five distinct subgroups of CPs were identified, defined by a unique combination of determinants (**Table 1**).

**Table 1.** Subgroups of Care Professionals based on implementation determinants

<b>Subgroup A</b>	Low confidence in and perceived client satisfaction with the Reporting Center for Child Abuse and Neglect (RCCAN), as well as poor collaboration and communication with RCCAN.
<b>Subgroup B</b>	Low ratings on RCCAN-related determinants and additional challenges within their internal organization, including a lack of formal agreements, resources, and limited support.
<b>Subgroup C</b>	Generally high to average ratings across determinants.
<b>Subgroup D</b>	Priority issues, limited communication skills, concerns about harming client relationships, and low client cooperation regarding the Childcheck.
<b>Subgroup E</b>	Overall low to average ratings on determinants.

### Implementation hypotheses

For specific determinants, implementation hypotheses were formulated in **Chapter 3** and **Chapter 4** focused on whether these hypotheses could be verified in practice. The relationship between determinants, BCTs, strategies, and their influence on implementation performance is complex. While certain combinations of BCTs and strategies appear to be valuable, their success depends on understanding the mechanisms that drive change. Mechanisms—the psychological or behavioural processes through which BCTs and strategies leads to actual behaviour change, such as knowledge, beliefs about capabilities, and social influence—bridge the gap between BCTs, strategies, and actual behaviour change. They explain *how* and *why* BCTs and strategies lead to meaningful outcomes. While BCTs are specific, observable techniques aimed to directly change behaviour, mechanisms explain how and why these BCTs lead to behaviour change. Understanding both BCTs and mechanisms clarifies why certain strategies are effective and provide insights into how they can be refined to become more targeted and effective.

Reflecting on our aim, can we conclude that we have fully achieved our goal based on these findings? Do we now know how to ensure the proper implementation of youth care guidelines? The answer is: not entirely. While this research enhanced our understanding of the determinants and strategies involved in the implementation process, a crucial element is still missing. Implementation should not be considered from a reductive perspective. It would be overly simplistic to suggest: *"You lack knowledge, which hinders implementation, so we will provide instructions through educational meetings, and the problem will be solved."* In reality, this process is much more complex: implementation requires a holistic approach honouring how interconnected determinants, BCTs, strategies, mechanisms influence implementation outcomes.

## A holistic approach to implementation

When introducing guidelines, innovations or improving existing interventions, it is advocated to follow a structured implementation process [1-3]. Generally, this process starts with identifying key barriers and facilitators that may influence the implementation of (new) interventions or guidelines, followed by the selection and/or development of appropriate implementation strategies to target these determinants. Finally, a process and outcome evaluation are performed to assess the effectiveness of the selected strategies and identify potential areas for improvement. This process is cyclical, characterized by continuous feedback and adaptation, which is vital for optimizing interventions, guidelines or innovations and ensuring success across diverse contexts [4].

However, despite the structured approaches available, current models aimed at guiding the implementation process—and, thereby, implementation research—often overlook two critical elements: the interconnectedness of determinants, as well as the underlying reasons why certain strategies are effective. Recognizing the interconnectedness of determinants is essential because challenges in implementation typically stem from the complex interaction of multiple factors, rather than isolated barriers and facilitators, and how they may manifest within different contexts (**Chapter 5**). Additionally, a deeper understanding into the *how* and *why* certain strategies work can provide valuable insights into why some approaches succeed while others fail (**Chapter 4**).

### Interconnected determinants

Several frameworks exist to identify implementation determinants, with the Consolidated Framework for Implementation Research (CFIR) most frequently used in implementation science [5]. The CFIR emphasizes the role of context in shaping the implementation of interventions across various settings. Within CFIR, context is integrated into domains like the outer setting (e.g., patient needs, external policies) and the inner setting (e.g., organizational culture, available resources). These domains aim to capture both external and internal factors that can act as barriers or facilitators. However, CFIR's approach often treats contextual determinants as isolated, overlooking their interconnectedness, the fact that determinants are related to each other. We need to move beyond asking *What are the (contextual) determinants that influence implementation?* and instead ask *How are these determinants interconnected? How do they influence each other and the context in which they occur?* [6].

This perspective aligns with the findings from **Chapter 5**, which reveal that CPs do not face isolated implementation determinants; rather, their implementation challenges arise from a combination of various determinants. Using LPA, we identified distinct subgroups, each characterized by a unique set of determinants they perceive as influencing implementation. For example, one subgroup highlighted the importance of client cooperation, communication skills,

and the CP-client relationship, all of which relate to CP-client interactions. Improving communication skills alone may not be sufficient if a CP is working with a non-cooperative client. Conversely, even if a client is highly cooperative, the lack of effective communication or a strong relationship may still impede the successful use of tools like the ChildCheck. This highlights how determinants are interconnected and how their interactions within a specific context shape implementation challenges.

### Behaviour change techniques and mechanisms of action

In contrast to interconnected determinants, a topic that has received relatively limited attention in implementation science, there is an emerging focus on systematically understanding the elements that drive effective implementation. In line with the findings of Proctor et al. [4, 7], our research argues that a clearer understanding of the connections between determinants, BCTs, strategies, mechanisms of action, and implementation outcomes is essential. This link can be viewed as a hierarchical structure facilitating the formulation and validation of implementation hypotheses. Within these hypotheses, *determinants* are factors influencing individual behaviour, and understanding their interconnectedness is crucial for selecting effective BCTs. *BCTs* are specific techniques designed to address these determinants, while *strategies* are broader plans that utilize BCTs to promote behaviour change. *Mechanisms of action* refer to the psychological or behavioural processes explaining how BCTs and strategies contribute to behaviour change, serving as the bridge between interventions and resulting behaviour changes. *Implementation outcomes* reflect the effects of strategies and interventions on their execution and application in practice, including acceptance, adherence, and sustainability. When interventions are well-aligned with these elements, the likelihood of successful implementation increases.

The past few years, BCTs and underlying mechanisms are increasingly acknowledged as critical to successful outcomes [1, 4, 8]. While this shift represents a significant advancement in the field, research remains in its infancy and is still concentrated on theoretical frameworks rather than practical applications [7, 9-11]. There is a need for empirical evidence on the relationship between BCTs, strategies, mechanisms, and implementation outcomes.

### Translating a holistic approach into future research

To translate this holistic approach into implementation research, we must ask ourselves: *how can we map the interrelationships between implementation determinants? What methods can we use to explore the complex interactions between determinants and context? And how can we not only measure the outcomes of implementation strategies but also explore why these outcomes emerge?* This section discusses approaches that can help answer these questions and how a holistic perspective can be integrated into implementation research.

### Methods in implementation research

The methods discussed below are derived from our research on the implementation of youth care guidelines and offer valuable insights that can extend beyond youth care, benefiting future implementation research in other fields. Depending on the phase of the study, each method can offer valuable insights.

#### *Mixed-method designs*

We advocate for the use of mixed-methods approaches as a standard practice throughout all stages of the implementation process, whenever feasible. While new quantitative methods continue to emerge that can capture the how and why behind implementation outcomes, qualitative research remains essential. Although quantitative methods are valuable in identifying what works and measuring outcomes at scale, qualitative research plays a crucial role in understanding the contextual nuances that shape success. Relying solely on quantitative methods can oversimplify complex processes, potentially missing key dynamics that influence implementation in real-world settings. Additionally, mixed-methods may also uncover complementary or unique insights that are often overlooked when using a single-method approach. As discussed in **Chapter 2**, qualitative research uncovered complexities in clinical guidelines and their effects on patient care—insights that were often missed in quantitative studies. Ultimately, maintaining a balance between quantitative and qualitative approaches is crucial to prevent results from becoming overly simplistic and poorly applicable in real-world settings. While quantitative methods can provide broad, generalizable data, qualitative methods offer depth and context that help interpret those results in a way that aligns with the complexities of everyday practice. By integrating both approaches, we can avoid reducing complex implementation processes to mere numbers, ensuring that interventions are not only statistically significant but also practically relevant and adaptable to diverse real-world contexts.

#### *Determinant analysis*

Identifying implementation determinants and, more importantly, understanding how they are interconnected, and influence implementation outcomes is generally the first step in the implementation process. To explore these relationships, methods such as Latent Profile Analysis (LPA), Network Analysis, and Structural Equation Modelling (SEM) can provide valuable insights. These methods enable researchers to uncover patterns, quantify relationships, and examine causal connections, providing deeper insights into how different determinants interact and collectively influence implementation. By revealing these interrelationships, these techniques offer practical guidance for designing more targeted and effective implementation strategies.

LPA (**Chapter 5**), is a statistical technique that identifies unobserved subgroups within a population based on patterns of responses across multiple observed variables, grouping individuals into profiles with similar patterns of behaviour or characteristics [12]. Within

implementation research, LPA allows researchers to better understand which determinants co-occur and interact in various contexts, and ultimately, influencing implementation. Instead of labelling "communication skills" as a barrier, this approach uncovers when these skills become problematic and whether they interact with other contextual factors. Within healthcare, the application of LPA is relatively new. However, their use has increased, particularly to identify profiles based on implementation determinants and participant characteristics [13-15] or to identify practitioner subgroups based on implementation strategies and treatment practices [16-19].

Network analysis is a method used to explore the relationships between variables by representing them as nodes in a network, with edges indicating the strength of their connections [20]. In implementation research, network analysis can identify how implementation determinants are interconnected and how they influence implementation outcomes, where the outcome is treated as a central node, and determinants as surrounding nodes connected through edges. This approach allows researchers to visualize and quantify the strength of these relationships, helping to identify the most influential determinants and understand how they interact within the network [21]. Network analysis can complement LPA by examining the interactions of determinants and their influence on implementation outcomes within identified subgroups.

Structural Equation Modelling (SEM) is a statistical technique used to explore causal relationships and interconnections between variables [22]. While network analysis identifies and visualize patterns and suggests hypotheses about the interconnectedness of certain determinants and their relationships with implementation outcomes, SEM can be used to test these hypotheses for causal relationships. It models both direct and indirect effects, making it particularly useful in implementation research. SEM helps identify how different implementation determinants are interconnected and which ones most strongly influence implementation. By examining these interrelationships, SEM provides a deeper understanding of the determinants that impact the implementation process within youth care.

System Modelling is another method to evaluate causal relationships, but it adds value by showing how these relationships change dynamically under different conditions or over time. Within implementation research, System Modelling can provide deeper insight into the long-term effects of interventions and contextual influences. It may offer a richer and more flexible approach than static causal models like SEM, as it considers the evolution and complexity of the system. Although uncommon in implementation research, its potential to understand the dynamics of implementation processes makes it worthwhile to further investigate and apply in youth care focused implementation research [23].

*Implementation hypotheses*

We believe that the foundation for effective implementation hypotheses development and evaluation lies in adopting a realist evaluation approach. This theory-driven approach provides a framework to understanding how, why, and under what circumstances interventions or guidelines achieve their intended outcomes [24]. It is grounded in the idea that their effectiveness depends on the interaction between context, mechanisms, and outcomes (CMO configurations). Through developing, testing, and refining programme theories, Realist Evaluation enables researchers and policymakers to design tailored implementation strategies that account for the diverse environments and challenges inherent in youth care systems. This approach ensures that interventions and guidelines are not only evidence-informed but also practically applicable in real-world settings.

Qualitative Comparative Analysis (QCA), Ripple Effect Mapping (REM), and SEM can be applied within Realist Evaluation to test implementation hypotheses, as they focus on causal relationships between determinants, BCTs, strategies, mechanisms, and outcomes, thereby enhancing the understanding of how and why implementation processes succeed or fail in different contexts.

Qualitative Comparative Analysis (QCA) is a set-theoretic method that examines how combinations of conditions influence specific outcomes, revealing interactions among determinants, BCTs, strategies, and mechanisms in implementation processes [25]. By identifying patterns that lead to success or failure, QCA helps to understand the complex dynamics of effective implementation across different settings [26-33]. It identifies necessary and sufficient conditions for successful outcomes, providing insights into which factors contribute to success in diverse contexts. For example, Goicolea et al. (2015) applied QCA to examine the successful implementation of IPV response in primary health care teams. They found that teams perceiving themselves as well-prepared, self-efficient, and adopting a woman-centred approach responded better to IPV. Additionally, team climate, training, and having a champion were crucial for success. Goicolea's study highlights how QCA can uncover key factors and configurations that drive successful implementation in complex settings like IPV response in health care.

REM is a participatory method that explores the broader effects of implementing guidelines, policies, or interventions. The primary goal is to understand how changes move through a system and the effects they produce, both intended and unintended [34, 35]. In REM, stakeholders such as healthcare providers, policymakers, or even patients are actively involved in identifying and mapping the outcomes of the implementation. REM goes beyond measuring success to explore why aspects of implementation succeed or fail, examining both expected and unexpected outcomes. By mapping ripple effects, REM uncovers the causes and pathways influencing implementation. This approach highlights the complex interactions of various factors and

contextual influences, providing insights that can inform strategies to optimize implementation processes. By engaging participants in reflecting on their experiences, REM revealed the mechanisms through which the program led to positive changes at the individual, family, and community levels [36].

Next to exploring the interconnectedness of determinants and their influence on implementation, SEM is also a useful method to evaluate implementation hypotheses, as it allows for testing causal relationships between BCT-strategy combinations and implementation outcomes. By modelling both direct and indirect effects, SEM provides insights into the underlying mechanisms driving these relationships [37].

### **Other lessons from the journey**

During the course of this dissertation, we encountered additional insights that, alongside the findings related to our research, are also valuable to consider in implementation research. These reflections have enriched our understanding of the complexities of guideline implementation and provide valuable insights for both future research and practice.

#### **Optimal implementation**

In implementation research, adherence rates—as part of implementation fidelity—are often used to analyse which factors influence guideline adherence and to examine whether adherence is linked to the effectiveness of an intervention [38-42]. However, researchers typically do not distinguish between intentional non-adherence and unintentional non-adherence. Intentional non-adherence occurs when providers or patients consciously modify the guidelines based on specific circumstances or preferences. In contrast, unintentional non-adherence is unplanned and can result from a lack of knowledge or when steps are overlooked or forgotten [43]. This distinction is crucial because focusing only on adherence may overlook the impact of intentional adaptations that could improve outcomes in some cases. This raises the question: should the focus be solely on achieving perfect adherence, or should we instead prioritize achieving the intended outcomes, such as improving child well-being, even if it requires some level of adaptation in how the guidelines are applied?

Research shows that within youth care, strict adherence is sometimes deemed undesirable in complex situations and adaptations are made to align interventions with the local context and specific client or professional situations [44, 45]. In the case of the Childcheck, CPs are required to engage in a conversation with the client to discuss concerns about the child's safety. In practice, however, CPs may encounter situations where engaging in such a conversation is deemed unsafe—either for the children, for themselves, or for others involved. In such cases, a CP might choose to skip the direct conversation and move immediately to protective actions. These adaptations are not necessarily detrimental. Thoughtful, deliberate adjustments—while

preserving the underlying principles of guidelines—can improve outcomes. Intentional adjustments, when guided by conceptual understanding and professional expertise, should be viewed as a strength rather than non-adherence. On the other hand, unintentional non-adherence may highlight areas where additional knowledge, resources, or organizational support may be needed.

Recognizing intentional non-adherence as a potential strength highlights the importance of adaptability in guideline implementation. However, before considering making guidelines more adaptable, we must identify which core elements are essential for achieving positive outcomes and which steps may be adjusted based on the context. This understanding is important to ensure that adaptations do not compromise the guideline's effectiveness, preserving its intended outcomes, and enables a more accurate interpretation of implementation research concerning adherence. Low adherence rates may not necessarily indicate poor implementation, as some steps may be adjusted without compromising the effectiveness of the intervention. The modified framework for implementation fidelity by Pérez et al. (2015) provides a structured approach to evaluate and refine interventions or guidelines by balancing adherence to core elements with necessary adaptations. This framework helps researchers define the essential components that are critical for achieving intended outcomes. At the same time, it recognizes the potential for context-specific adaptations, allowing flexibility in implementation without compromising effectiveness. By following this approach, researchers and practitioners can create guidelines or interventions that are both structured and adaptable. Acknowledging this balance will help create guidelines that are both structured and adaptable, where we prioritize optimal adherence over perfect adherence.

#### Behaviour change as the core of implementation.

As highlighted throughout this dissertation, implementation research cannot be fully effective without insights from the behavioural sciences. At its core, implementation research focuses on behaviour change—whether at the individual, team, or organizational level. Therefore, behavioural insights are essential to understand and support the adoption of new practices or policies [47-49]. Both fields seek to understand the drivers of change. Disciplines like psychology and sociology reveal why people or systems behave as they do and how their behaviour can be influenced. This is crucial, as implementing new guidelines is not just about providing resources; it involves changing behaviours within complex systems. Ultimately, integrating behavioural sciences with implementation research is key to achieving sustainable change. Recognizing their interdependence enables a deeper understanding of how to effectively drive lasting impact.

#### Reflecting on the state of implementation research

Even though some aspects and knowledge discussed in this dissertation are relatively new within the field of implementation research, other aspects have been known for some time. For

example, the importance of mechanisms was highlighted by Proctor as early as 2011, and the modified framework on fidelity and adaptation was developed in 2015. The benefits of using mixed-methods have also been well-documented. This leads to the critical question: why is this existing knowledge not (yet) optimally applied within implementation research? To address this, we must acknowledge the paradox that exists within the field: "To improve the field of implementation research, we must conduct implementation research to understand why the implementation of implementation research itself is not optimal."

### Implications of findings

The findings of this dissertation emphasize that knowledge of guidelines, communication skills, and engagement at both professional and management levels are important for successfully implementing youth care guidelines. Perhaps even more important is the collaboration with external organizations, such as other care institutions or governmental agencies such as in the case of (mental) youth care. However, the extent to which these determinants influence guideline implementation is highly context-dependent. The findings underscore the need for a more comprehensive and systematic approach to implementation research. Often, existing models fall short in capturing the complex interplay between various determinants and how this can enhance the development of targeted implementation strategies. Additionally, many frameworks fail to address the how and why of behaviour change, leaving gaps in understanding the mechanisms driving effective implementation.

These gaps led to the development of a framework that provides researchers with a structured, theory-driven approach to exploring the implementation process (**Figure 1**). This framework systematically guides researchers through key steps, beginning with the identification of interconnected contextual determinants. Instead of examining these factors in isolation, it encourages exploring how they interact within specific contexts. By identifying the behaviour changes needed to address these determinants, researchers can apply targeted BCTs to effectively address barriers and enhance facilitators. These BCTs are subsequently translated into practical strategies tailored to the unique needs of the target setting. The next step is understanding how and why these strategies induce behaviour change, focusing on uncovering underlying mechanisms. This step is crucial for bridging the gap between strategies and desired implementation outcomes, helping researchers understand the change processes. It functions as a cyclical process, allowing for continuous feedback and refinement, ensuring that interventions can adapt to emerging challenges.

To operationalize this holistic approach, we recommend employing analytical methods that can capture the complex relationships between determinants, BCTs, strategies, mechanisms, and outcomes. Techniques like LPA, Network analysis, SEM, QCA, and REM could be particularly useful in identifying patterns and interactions for future research that may not be evident

through traditional methods. By combining these methods with qualitative approaches, researchers can gain deeper insights into the dynamics and context-specific nuances of real-life situations. This integrated approach enables researchers to examine the dynamic interplay between various factors and context, offering a deeper understanding of the implementation in practice and helping to tailor strategies and improve outcomes.

Based on Realist Evaluation and the acknowledgement of applying a holistic approach, our framework addresses key gaps in existing approaches such as Intervention Mapping, Theory-Informed Behaviour Change, or the Implementation Research Logic Model, by introducing novel elements that enhance their applicability and relevance:

1. **Interconnectivity of Determinants:** Unlike existing frameworks, which often treat determinants as isolated factors, our framework emphasizes their interconnectedness, offering a more realistic understanding of implementation contexts.
2. **Structured overview:** By systematically linking determinants, BCTs, strategies, mechanisms, and outcomes, a comprehensive and practical roadmap is provided for developing implementation hypotheses.
3. **Analytical guidance:** The framework outlines key considerations for evaluations involved the implementation process.
4. **Cyclic process:** It acknowledges the cyclical process, ensuring continuous adaptation and learning from evaluations and changing contexts.

Our framework strengthens existing models by offering a comprehensive approach that integrates development and evaluation, addresses the complexity of real-world implementation, and provides practical tools for both designing and assessing interventions. It offers a robust foundation for sustainable and effective implementation in real-world contexts.

### [Applying a holistic approach to a Childcheck implementation research](#)

#### *Determinant analyses*

Building on the LPA, we explore the process of understanding and improving the implementation of the Childcheck among CPs. The LPA in **Chapter 5** highlighted determinants influencing Childcheck adherence but did not account for intentional or unintentional non-adherence. Future research should include questions about adherence to specific steps, exploring reasons for non-adherence, which can be deemed irrelevant when valid, allowing for a more targeted exploration of determinants influencing unintentional non-adherence. Although the LPA highlighted key determinants and their interconnectedness, it does not explain why these determinants are interconnected or how they may negatively impact the implementation of the Childcheck. Therefore, qualitative research is necessary to explore this further. For example, subgroup D, which was identified in the LPA, highlighted key determinants such as communication skills, client cooperation, and CP-client relationship **Table 1**. A qualitative

analysis could reveal that CPs struggle to implement the Childcheck not due to a lack of general communication skills, but because they feel unable to initiate conversations in specific situations—especially with resistant, aggressive clients or those with whom they have established a trust-based relationship.

### *Implementation hypotheses*

Following the above analyses, we should apply a Realist Evaluation (RE) approach to develop, evaluate and refine program theories based on the insights gathered from the LPA and qualitative research. In the first phase of the RE process, we should formulate CMO configurations (Context, Mechanism, Outcome), through a series of IF, THEN, BECAUSE statements. These configurations serve as implementation hypotheses about the conditions under which the Childcheck is most effectively implemented. Examples of these configurations are listed in **Table 2**.

In phase two, these CMO configurations should be tested in practice. For this case study, an option would be to use Ripple Effect Mapping (REM), a method that helps visualize the impact of interventions (**Table 2**). This phase will provide clarity on whether the formulated CMO configurations are accurate and help explain why and how the Childcheck can be successfully implemented in different situations. The data gathered during this phase will inform the refinement of the program theory.

In the third phase, the program theory will be refined based on the findings from phase two. The initial CMO configurations should be adjusted and improved based on real-world experiences shared by CPs. This refined theory should be robust enough to provide practical, evidence-based recommendations for the implementation of the Childcheck (**Table 2**). The refined implementation hypotheses could be presented in a detailed report that includes concrete recommendations for policymakers and implementers, such as:

1. A customized implementation strategy that emphasizes both training and ongoing peer support.
2. Practical toolkits or guides for CPs dealing with challenging client situations, with specific tips for managing resistance or aggression.
3. Guidance on how the implementation process can be continuously adjusted to meet the evolving needs of CPs, with room for feedback and iterative adjustments.

By refining implementation hypotheses through these phases, we aim to provide a foundation to improve the Childcheck's implementation in practice. The goal is to equip CPs with the tools and support they need to apply the Childcheck more effectively and confidently, ultimately improving outcomes for children and families.

**Table 2.** The development, evaluation, and refinement of implementation hypotheses for the Childcheck

<b>Phase 1: Develop implementation hypotheses</b>	
<b>CONTEXT</b>	CPs struggle to implement the Childcheck, not due to a lack of communication skills in general, but because they feel unable to initiate the conversation with resistant or aggressive clients or those with whom they have established a trust-based relationship.
<i>CMO Configuration 1</i>	
<b>IF</b>	CPs practice challenging situations (BCT) through ongoing training (strategy) and receive brief educational materials (strategy) with practical guidance (BCT) on discussing the Childcheck in these situations.
<b>THEN</b>	They will feel more competent and confident in applying the Childcheck in complex situations,
<b>BECAUSE</b>	Scenario-based training enhance skills and confidence through practice, while accessible guidance tools offer immediate support, reinforcing their ability to implement the Childcheck in complex situations.
<i>CMO Configuration 2</i>	
<b>IF</b>	CPs are given the space and support (BCT) to discuss cases with colleagues using network weaving (strategy), where they receive feedback (BCT), engage in problem-solving (BCT), and develop tailored strategies (strategy) for managing difficult client situations.
<b>THEN</b>	They will adapt their approach to suit diverse client needs, foster a collaborative culture within their organization, and apply the Childcheck with greater confidence,
<b>BECAUSE</b>	Peer-to-peer support and collaborative problem-solving enhance skills, create a supportive environment for sharing insights, and build trust and confidence through shared successes.
<b>Phase 2: Evaluate implementation hypotheses (using Ripple Effect Mapping)</b>	
<b>WHAT</b>	Use REM to evaluate the broader impact of training, education materials, and peer-to-peer support, particularly regarding changes in CPs' behaviour and the implementation of the Childcheck in various situations.
<b>HOW</b>	Collect data from CPs, policymakers, and other stakeholders who have been involved in the implementation process. Map how these strategies affect the implementation of the Childcheck in complex situations.
<b>WHY</b>	REM helps visualize changes in behaviour and attitudes following training, education materials, and peer interactions, providing insights into whether the applied BCTs and strategies are leading to a more consistent implementation of the Childcheck through the expected mechanisms.
<b>Phase 3: Refine and present refined implementation hypotheses</b>	
<b>Refinement 1</b>	Tailored training and support: It may show that CPs benefit from ongoing training and educational materials, but additional emotional support could be essential in managing complex situations they may encounter.
<b>Refinement 2</b>	Structured peer-to-peer sessions: If peer support is crucial for boosting confidence, the theory could be refined to include more structured sessions, to ensure ongoing learning and support in daily practice.
<b>Refinement 3</b>	Context-specific materials: If CPs struggle to use the Childcheck in specific situations, providing tools like a "quick guide" could offer short, practical support for those situations.

## Concluding remarks

This dissertation underscores the complexities of guideline implementation in youth care, with a particular focus on CAN and DV, highlighting that the process is far from straightforward. Similar to the unexpected detour mentioned in the introduction—where heavy rain and blurred vision disrupted the journey—implementation in practice often faces significant challenges. Much of the current implementation research fails to address the dynamic, context-dependent nature of these challenges, limiting its practical applicability.

A key contribution of this work is the recognition of the interconnectedness of determinants within the implementation process. Furthermore, by focusing on the causal relationships between BCTs, implementation strategies, and underlying mechanisms, this work advocates for a holistic approach to implementation research. This approach highlights the need to understand not only which strategies work, but also how and why they succeed or fail in specific contexts. The development of a framework in this research aims to bridge the gap between theory, research, and practice. By embracing a holistic view of the implementation process—one that considers both the dynamic interconnections and the contextual factors that shape causal pathways—we aim to provide insights that can better support effective guideline implementation.

Youth care, and particular concerning CAN and DV, is a sector where the implementation of guidelines is not simply a matter of adherence. The complexity of the involved organizations, ethical considerations, and the diversity of situations make it necessary apply a holistic approach to implementation research, to develop effective, tailored, context-specific, and sustainable implementation approaches.

Ultimately, just as every journey requires flexibility to adapt to changing conditions, so implementation research must evolve to meet the needs of practitioners in real-world settings. This dissertation hopes to contribute to that evolution by providing a clearer path forward—one that guides us not merely towards implementation, but towards meaningful, context-driven outcomes that truly benefit children and families.

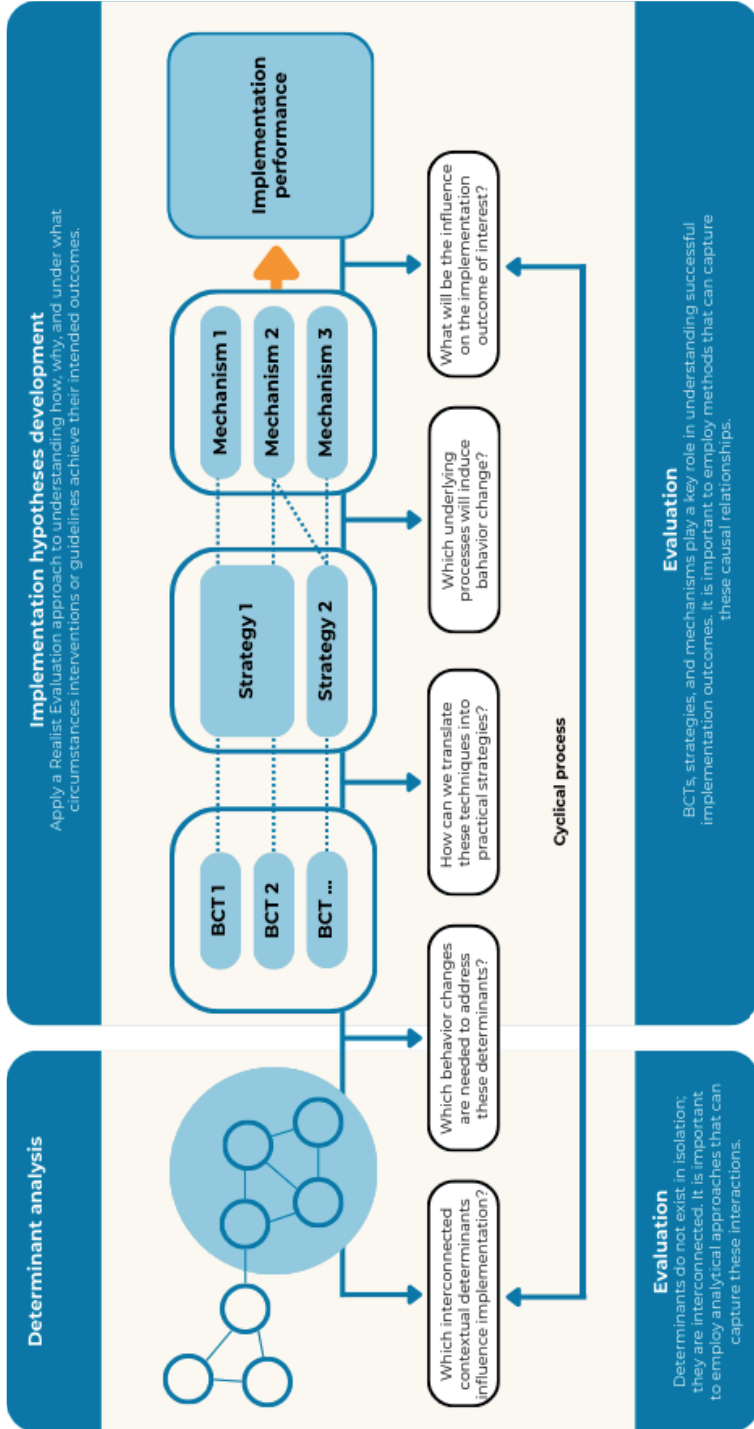


Figure 1. Framework guiding the identification of contextual determinants, behavior change techniques, and mechanisms to inform adaptive implementation strategies.

## References

- French, S.D., S.E. Green, D.A. O'Connor, J.E. McKenzie, J.J. Francis, S. Michie, R. Buchbinder, P. Schattner, N. Spike, and J.M. Grimshaw, *Developing theory-informed behaviour change interventions to implement evidence into practice: a systematic approach using the Theoretical Domains Framework*. Implementation science, 2012. **7**: p. 1-8.
- Fernandez, M.E., G.A. Ten Hoor, S. Van Lieshout, S.A. Rodriguez, R.S. Beidas, G. Parcel, R.A. Ruiters, C.M. Markham, and G. Kok, *Implementation mapping: using intervention mapping to develop implementation strategies*. Frontiers in public health, 2019. **7**: p. 158.
- Smith, J.D. and M. Hasan, *Quantitative approaches for the evaluation of implementation research studies*. Psychiatry research, 2020. **283**: p. 112521.
- Proctor, E., H. Silmere, R. Raghavan, P. Hovmand, G. Aarons, A. Bunger, R. Griffey, and M. Hensley, *Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda*. Administration and policy in mental health and mental health services research, 2011. **38**: p. 65-76.
- Damschroder, L.J., D.C. Aron, R.E. Keith, S.R. Kirsh, J.A. Alexander, and J.C. Lowery, *Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science*. Implementation science, 2009. **4**(1): p. 1-15.
- Rogers, L., A. De Brún, S.A. Birken, C. Davies, and E. McAuliffe, *Context counts: a qualitative study exploring the interplay between context and implementation success*. Journal of Health Organization and Management, 2021. **35**(7): p. 802-824.
- Proctor, E.K., A.C. Bunger, R. Lengnick-Hall, D.R. Gerke, J.K. Martin, R.J. Phillips, and J.C. Swanson, *Ten years of implementation outcomes research: a scoping review*. Implementation Science, 2023. **18**(1): p. 31.
- Michie, S., M. Richardson, M. Johnston, C. Abraham, J. Francis, W. Hardeman, M.P. Eccles, J. Cane, and C.E. Wood, *The behavior change technique taxonomy (v1) of 93 hierarchically clustered techniques: building an international consensus for the reporting of behavior change interventions*. Annals of behavioral medicine, 2013. **46**(1): p. 81-95.
- Lewis, C.C., M.R. Boyd, C. Walsh-Bailey, A.R. Lyon, R. Beidas, B. Mittman, G.A. Aarons, B.J. Weiner, and D.A. Chambers, *A systematic review of empirical studies examining mechanisms of implementation in health*. Implementation Science, 2020. **15**: p. 1-25.
- Michie, S., R. West, K. Sheals, and C.A. Godinho, *Evaluating the effectiveness of behavior change techniques in health-related behavior: a scoping review of methods used*. Translational behavioral medicine, 2018. **8**(2): p. 212-224.
- van den Bekerom, L., L.C. van Gestel, J.W. Schoones, J. Bussemaker, and M.A. Adriaanse, *Health behavior interventions among people with lower socio-economic position: a scoping review of behavior change techniques and effectiveness*. Health Psychology and Behavioral Medicine, 2024. **12**(1): p. 2365931.
- Oberski, D., *Mixture models: Latent profile and latent class analysis*. Modern statistical methods for HCI, 2016: p. 275-287.
- Yang, Q., A. Zhao, C. Lee, X. Wang, A. Vorderstrasse, and R.Q. Wolever, *Latent profile/class analysis identifying differentiated intervention effects*. Nursing research, 2022. **71**(5): p. 394-403.
- Weissinger, G., C. Ho, L. Ruan-lu, C. Van Fossen, and G. Diamond, *Barriers to mental health services among college students screened in student health: A latent class analysis*. Journal of American college health, 2024. **72**(7): p. 2173-2179.
- Qu, H., R.M. Shewchuk, J. Richman, L.J. Andraea, and M.M. Safford, *Identifying patient profiles for developing tailored diabetes self-management interventions: a latent class cluster analysis*. Risk Management and Healthcare Policy, 2022: p. 1055-1063.
- Piper, K.N., R. Haardörfer, C. Escoffery, A.N. Sheth, and J. Sales, *Exploring the heterogeneity of factors that may influence implementation of PrEP in family planning clinics: a latent profile analysis*. Implementation Science Communications, 2021. **2**: p. 1-14.
- Madrigal, L., R. Haardörfer, M.C. Kegler, S. Piper, L.M. Blais, M.B. Weber, and C. Escoffery, *Patterns of Sustainability Capacity Among Organizations That Deliver the National Diabetes Prevention Program: A Latent Profile Analysis*. Preventing Chronic Disease, 2023. **20**: p. E91.
- Becker-Haimes, E.M., V. Lushin, T.A. Creed, and R.S. Beidas, *Characterizing the heterogeneity of clinician practice use in community mental health using latent profile analysis*. BMC psychiatry, 2019. **19**: p. 1-11.
- Adams, E.K., A. Nathan, P. George, S.G. Trost, J. Schipperijn, and H. Christian, *Physical Activity-Related Practices and Psychosocial Factors of Childcare Educators: A Latent Profile Analysis*. Children, 2024. **11**(4): p. 390.
- Hevey, D., *Network analysis: a brief overview and tutorial*. Health psychology and behavioral medicine, 2018. **6**(1): p. 301-328.
- Pérez-Escamilla, B., S.I. Benrimoj, F. Martínez-Martínez, M.Á. Gastelurrutia, R. Varas-Doval, K. Musial-Gabrys, and V. Garcia-Cardenas, *Using network analysis to explore factors moderating the implementation of a medication review service in community pharmacy*. Research in Social and Administrative Pharmacy, 2022. **18**(3): p. 2432-2443.
- Ghaleb, M. and M. Yaslioglu, *Structural Equation Modeling (SEM) for Social and Behavioral Sciences Studies: Steps Sequence and Explanation*. Journal of Organizational Behavior Review. **6**(1): p. 69-108.

23. Fowler, A., *Systems modelling, simulation, and the dynamics of strategy*. Journal of Business Research, 2003. **56**(2): p. 135-144.
24. Pawson, R. and N. Tilley, *An introduction to scientific realist evaluation*. Evaluation for the 21st century: A handbook, 1997. **1997**: p. 405-18.
25. Ragin, C.C., *The comparative method: Moving beyond qualitative and quantitative strategies*. 2014: Univ of California Press.
26. Kahwati, L., S. Jacobs, H. Kane, M. Lewis, M. Viswanathan, and C.E. Golin, *Using qualitative comparative analysis in a systematic review of a complex intervention*. Systematic reviews, 2016. **5**: p. 1-12.
27. Burchett, H.E., K. Sutcliffe, G. Melendez-Torres, R. Rees, and J. Thomas, *Lifestyle weight management programmes for children: a systematic review using qualitative comparative analysis to identify critical pathways to effectiveness*. Preventive medicine, 2018. **106**: p. 1-12.
28. Ziemann, A., A. Sibley, S. Tuvey, S. Robens, and H. Scarbrough, *Identifying core strategies and mechanisms for spreading a national medicines optimisation programme across England—a mixed-method study applying qualitative thematic analysis and Qualitative Comparative Analysis*. Implementation Science Communications, 2022. **3**(1): p. 116.
29. Breuer, E., P. Subba, N. Luitel, M. Jordans, M. De Silva, B. Marchal, and C. Lund, *Using qualitative comparative analysis and theory of change to unravel the effects of a mental health intervention on service utilisation in Nepal*. BMJ global health, 2018. **3**(6): p. e001023.
30. Fernald, D.H., M.J. Simpson, D.E. Nease Jr, D.L. Hahn, A.E. Hoffmann, L.C. Michaels, L.J. Fagnan, J.M. Daly, and B.T. Levy, *Implementing community-created self-management support tools in primary care practices: multimethod analysis from the INSTTEPP study*. Journal of patient-centered research and reviews, 2018. **5**(4): p. 267.
31. Goicolea, I., C. Vives-Cases, A.-K. Hurtig, B. Marchal, E. Briones-Vozmediano, L. Otero-García, M. García-Quinto, and M. San Sebastian, *Mechanisms that trigger a good health-care response to intimate partner violence in Spain. Combining realist evaluation and qualitative comparative analysis approaches*. PLoS one, 2015. **10**(8): p. e0135167.
32. Blackman, T., J. Wistow, and D. Byrne, *Using qualitative comparative analysis to understand complex policy problems*. Evaluation, 2013. **19**(2): p. 126-140.
33. Lubold, A.M., *The effect of family policies and public health initiatives on breastfeeding initiation among 18 high-income countries: a qualitative comparative analysis research design*. International Breastfeeding Journal, 2017. **12**: p. 1-11.
34. Emery, M., L. Higgins, S. Chazdon, and D. Hansen, *Using ripple effect mapping to evaluate program impact: Choosing or combining the methods that work best for you*. The Journal of Extension, 2015. **53**(2): p. 28.
35. Chazdon, S., M. Emery, D. Hansen, L. Higgins, and R. Sero, *A field guide to ripple effects mapping*. 2017: University of Minnesota Libraries Publishing.
36. Olfert, M.D., S.J. King, R.L. Hagedorn, M.L. Barr, B.A. Baker, S.E. Colby, K.K. Kattelmann, L. Franzen-Castle, and A.A. White, *Ripple effect mapping outcomes of a childhood obesity prevention program from youth and adult dyads using a qualitative approach: iCook 4-H*. Journal of nutrition education and behavior, 2019. **51**(3): p. S41-S51.
37. Ruzafa-Martínez, M., S. Fernández-Salazar, C. Leal-Costa, and A.J. Ramos-Morcillo, *Determinants of Evidence Implementation by Nurses: # Evidencer Model for the Use of Evidence-Based Practice (# EvidencerMUSEBP)—A Structural Equation Model*. Journal of Nursing Management, 2024. **2024**(1): p. 7246547.
38. Konijnendijk, A.A., M.M. Boere-Boonekamp, M.A. Fleuren, M.E. Haasnoot, and A. Need, *What factors increase Dutch child health care professionals' adherence to a national guideline on preventing child abuse and neglect? Child abuse & neglect*, 2016. **53**: p. 118-127.
39. Raess, L., G. Staubli, and M. Seiler, *Assessing guideline adherence and child abuse evaluation in infants with fractures: a retrospective quality control study*. Swiss Medical Weekly, 2024. **154**(9): p. 3781.
40. Di Lorenzo, P., C. Casella, S. Dei Medici, F. Policino, E. Capasso, and M. Niola, *Child abuse: determinants of clinical management to guidelines for diagnosis of physical maltreatment and neglect in emergency settings*. International journal of environmental research and public health, 2023. **20**(6): p. 5145.
41. Dinnissen, M., A. Dietrich, J.H. van der Molen, A.M. Verhallen, Y. Buiteveld, S. Jongejan, P.W. Troost, J.K. Buitelaar, P.J. Hoekstra, and B.J. van den Hoofdakker, *Prescribing antipsychotics in child and adolescent psychiatry: guideline adherence*. European child & adolescent psychiatry, 2020. **29**: p. 1717-1727.
42. Chung, J., A. Tchaconas, D. Meryash, and A. Adesman, *Treatment of attention-deficit/hyperactivity disorder in preschool-age children: Child and adolescent psychiatrists' adherence to clinical practice guidelines*. Journal of child and adolescent psychopharmacology, 2016. **26**(4): p. 335-343.
43. Arts, D.L., A.G. Voncken, S. Medlock, A. Abu-Hanna, and H.C. van Weert, *Reasons for intentional guideline non-adherence: a systematic review*. International journal of medical informatics, 2016. **89**: p. 55-62.
44. Bromley, A.R., *Flexibility within fidelity: a narrative review of practitioner modifications to child welfare interventions*. Children and Youth Services Review, 2023. **149**: p. 106908.
45. van Assen, A., J. Knot-Dickscheit, H. Grietens, and W. Post, *Fidelity and flexibility of care activities in child-centered youth care for children growing up in families experiencing complex and multiple problems*. Children and Youth Services Review, 2021. **123**: p. 105923.

46. Pérez, D., P. Van der Stuyft, M.d.C. Zabala, M. Castro, and P. Lefèvre, *A modified theoretical framework to assess implementation fidelity of adaptive public health interventions*. Implementation Science, 2015. **11**: p. 1-11.
47. Presseau, J., N.M. Ivers, J.J. Newham, K. Knittle, K.J. Danko, and J.M. Grimshaw, *Using a behaviour change techniques taxonomy to identify active ingredients within trials of implementation interventions for diabetes care*. Implementation Science, 2015. **10**(1): p. 1-10.
48. Glanz, K. and D.B. Bishop, *The role of behavioral science theory in development and implementation of public health interventions*. Annual review of public health, 2010. **31**(1): p. 399-418.
49. Tilson, J.K., C. Martinez, S. Mickan, L.J. D'Silva, R. Howard, S. MacDowell, H.R. Roth, K.M. Skop, E. Dannenbaum, and L. Farrell, *Understanding Behavior Change in Clinical Practice Guideline Implementation: A Qualitative Study*. Journal of Neurologic Physical Therapy, 2024: p. 10.1097.