

RtKW 10: Implementation mechanisms

Causal pathways of tobacco control policy implementation in low- and middle-income countries

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Research aims and reality: (Comprehensive) understanding or reduction of the complexity of social systems as a central research object in applied implementation research - to what extent must methods be adapted to gain socially meaningful and yet robust findings?

Sara Söling¹, Juliane Köberlein-Neu¹

Building support for schools that implement curriculum designed for students personal and social development: the moderated mediation of organizational-level determinants and normalisation process

Dinka Caha¹, Mateja Marić¹

Advancing our understanding of the complexity of implementation efforts by exploring implementation mechanisms of a multifaceted implementation strategy on fidelity to an evidence-based guideline for the prevention of mental ill health; a cluster-randomised controlled trial in schools

Lydia Kwak¹, Andreas Rödlund¹, Anna Toropova¹, Christina Björklund¹, Rebecca Lengnick-Hall², Byron Powell², Liselotte Elinder¹

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Causal pathways of tobacco control policy implementation in low- and middle-income countries

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Research aim

To investigate causal pathways and mechanisms of tobacco control policy implementation in low- and middle-income countries (LMICs): (1) What are the key barriers and facilitators influencing policy implementation outcomes?; (2) What policy implementation strategies work to address facilitators and barriers in LMIC contexts, and through what mechanisms?

Setting

We purposively selected six LMICs, one per World Health Organization (WHO) region, which adopted or strengthened tobacco control policies in 2012-2020. We focused on three WHO Framework Convention on Tobacco Control measures: smoke-free public places (Art. 8), tobacco advertising, promotion and sponsorship (Art. 11) and graphic health warnings (Art. 9).

Method(s)

The study employed a complexity and realist approach and qualitative design. It was guided by the Consolidated Framework for Implementation Research (CFIR) 2.0 and Outcomes Addendum, the Expert Recommendations for Implementing Change (ERIC), and the Capability, Opportunity, and Motivation (COM-B) model. In 2024, we conducted 18 remote semi-structured interviews with purposively selected tobacco control policy implementers from public bodies, civil society, and international organisations in Bolivia, Cambodia, Jordan, Kazakhstan, Timor Leste, and Uganda. We thematically analysed the interview transcripts for context-strategy-mechanism-outcome constructs, which we further analysed in a causal map for feedback loops, (un-) intended consequences, and key implementation pathways.

Key finding(s)

Preliminary findings show key causal pathways between contextual determinants and policy implementation strategies and mechanisms, and policy implementation outcomes. Some are common across countries and policies, and some differ in relevance/priority depending on the type of policy and the country context. Example causal pathways towards implementation and sustainability (outcome) include increasing capabilities (mechanism) of policy implementers such as tobacco retailers by providing training and resources (strategies) or creating implementation opportunity (mechanism) by ensuring sufficient resources (strategy) while navigating power relationships (context), e.g., ministry staff enforcing penalties in corrupted environments. Final results will be presented at the EIE2025.

Discussion

- Has the twain met between policy implementation and implementation science? Referring to the article 'Never the twain shall meet?' by Nilsen et al. (2013), this project derives some learning by applying implementation science theory and approaches to exploring policy implementation practice in low-resource settings.
- Do complexity and realist approaches help walk the tightrope between implementation science and practice? This project applied causal mapping and realist evaluation methods and uncovered underlying mechanisms and causal linkages explaining policy implementation in the real world.

Challenges

We faced challenges recruiting enough English-speaking interview participants in some countries which is why we chose to add the option to answer interview questions online in writing instead of conducting an interview. This recruitment phase is ongoing, and we hope to obtain further responses in the next months.

RtKW 201

Research aims and reality: (Comprehensive) understanding or reduction of the complexity of social systems as a central research object in applied implementation research - to what extent must methods be adapted to gain socially meaningful and yet robust findings?

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Research aim

Mechanism research is particularly useful for assessing the complexity of (underlying) causal pathways in implementation processes. The present study aims to identify contextual factors relevant to physician behaviour as one source of complexity in implementation mechanisms and how they might mediate the adoption process.

Setting

A digital clinical decision support system (CDSS) for polypharmacy management was implemented in 411 active primary care practices to improve patient safety. CDSS provided patient-relevant drug therapy information based on the patient's medication history, providing insights that extend beyond the scope of information accessible through traditional care pathways in Germany.

Method(s)

A sequential and exploratory formative design was employed. First phase: interviews and focus groups (n=27) about physician expectations and experiences; second phase: survey (n=218 physicians). Analysis of mechanisms followed three steps: 1) a realist inquiry approach to describe how context, mechanism, and outcome relate; 2) a belief elicitation approach transforming physicians' beliefs about the effectiveness of digital CDSS into a latent scale; 3) structural equation modelling (SEM) to test the role of the latent mediator scale (step 2) in implementation mechanism. Since SEM requires input for causal assumptions, the assumptions incorporated were informed by the results of steps 1 and 2.

Key finding(s)

Empirical findings indicate that physicians' beliefs about digital CDSS mediated structural relations between organisational factors and physicians' adoption behaviour; mediation effect accounted for 38% of the total effect. Physicians' beliefs focus on safety issues, information quality and doctor-patient communication rather than organisational efficiency, although primary care practices' organisational readiness to change has a strong direct effect on the micro-level adoption process. Disaggregating different levels of the primary care social system was important to reduce complexity in the analysis of implementation mechanisms. Initial theoretically and qualitatively grounded description of the implementation mechanism led to a refinement after SEM empirical analysis.

Discussion

Due to a small number of cases and clusters in many implementation research projects, it is often not possible to use conventional statistical methods (e.g. multilevel models) for modelling the interplay of different social system levels and contextual factors as sources of complexity, like in the present study. Starting from this general problem, our theory-driven empirical approach enables researchers facing similar challenges to generate evidence on implementation mechanisms that emerge in multilevel social systems and refine theories used in implementation science. Which (combination) of methods could further enhance mechanism and complexity research beyond combining realist approaches with SEM mediation analysis?

RtKW 286

Building support for schools that implement curriculum designed for students personal and social development: the moderated mediation of organizational-level determinants and normalisation process

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Research aim

This paper examines the mechanism that supports the implementation of the curriculum in school practice. We discuss the mediating role of normalisation in explaining the relationship between organizational-level determinants and feasibility. Further, we examine whether the relationships between organizational-level determinants and feasibility depend on the professionals who deliver the curriculum.

Setting

This project focuses on the Personal and Social Development curriculum, an integrated teaching approach that promotes a healthier lifestyle, increases students' contribution to the community and strengthens their sense of responsibility and respect for themselves and others. The curriculum was disseminated in the Croatian school system in 2019.

Method(s)

We conducted a mixed-methods implementation study in the fall of 2024 to document mechanisms that support implementation outcomes. This paper focuses on survey data from 338 Croatian high school teachers and support professionals. We applied the PARIHS framework, the Proctor Implementation Outcome Framework, and the Normalization Process Theory to the school context to guide study activities and assess the implementation of the Personal and Social Development curriculum. To test relationships, we treated feasibility as an indicator of implementation success, organizational-level determinants from PARISH as predictors, the normalisation process as a mediator, and workplace as moderator (one teacher, two support professionals).

Key finding(s)

The analysis showed that the normalisation process fully mediated the relationship between four of the six organizational-level determinants (leadership culture, school staff culture, opinion leaders, and general resources) and feasibility. In turn, the normalisation process positively relates to higher levels of feasibility. The moderated mediation analysis revealed that the workplace fully moderated the mediation mechanism between school staff culture and the normalisation process, as well as school staff culture and feasibility. The mediated effect was significantly stronger for support professionals than for teachers. The interaction between the workplace and the normalisation process in predicting feasibility was not statistically significant.

Discussion

When creating implementation plans to uptake and sustain the delivery of interventions within school systems, it is valuable to strengthen leadership and staff commitment, especially among support professionals, while ensuring the provision of adequate resources. Leadership behaviours and measurement did not contribute to the normalisation process that enabled the feasibility of the school curriculum.

Why is it that leadership behaviour and measurement did not exhibit a significant mediating effect on the feasibility through the normalisation process?

What implementation strategies do we have to help us foster understanding and trust between professionals (to further the normalisation and openness toward intervention delivery)?

Challenges

Implementation research is lagging in Eastern European countries. A scarce implementation terminology and a lack of awareness of its nuanced concepts within the Croatian language made translating instruments challenging. Therefore, before data collection, we conducted a focus group with school teachers and support professionals, English and Croatian lecturers.

RtKW 306

Advancing our understanding of the complexity of implementation efforts by exploring implementation mechanisms of a multifaceted implementation strategy on fidelity to an evidence-based guideline for the prevention of mental ill health; a cluster-randomised controlled trial in schools

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Research aim

Understanding how and why implementation efforts fail or succeed is a necessity to ensure effective impact in real-life settings, such as schools. This study aims to further our understanding on implementation efforts by exploring implementation mechanisms through which implementation strategies operate to affect guideline fidelity in a school setting.

Setting

This study provides valuable knowledge regarding the effectiveness of a multifaceted strategy for the implementation of a guideline for the prevention of mental ill-health among school staff in the Swedish school setting. It contributes to the shortage of context specific implementation strategy research in the relatively understudied school setting.

Method(s)

We conducted a cluster-randomized controlled trial in 55 schools. The multifaceted strategy included an educational meeting, workshops, implementation teams, facilitation, and plan-do-study-act cycles. The discrete strategy consisted of the educational meeting and implementation teams. Guideline fidelity was measured among school staff at baseline (n=2276) and after 12 months (n=1891). Data on hypothesised mediators was collected from implementation team members (n=214) at baseline and after the third and fifth workshops using the *Determinants of Implementation Behavior Questionnaire* based on the *Theoretical Domains Framework* (TDF). Mediation analyses were performed on the ten hypothesised mediators from TDF by using PROCESS Macro for SPSS.

Key finding(s)

Favourable effects were observed for the multifaceted strategy in guideline fidelity compared to the discrete strategy at 12 months ($B = 2.81, p < .001$). Multifaceted schools reported higher scores for all mediators after workshop five compared to schools receiving the discrete strategy. The effect of the multifaceted strategy on fidelity was partially mediated by all mediators ($p < .05$) except for beliefs about consequences. Skills (Proportion-mediated = 41%, $p < .01$) and behavioural regulation (Proportion-mediated = 35%, $p < .001$) accounted for the largest proportion of the effect, followed by the motivation-related construct of goals (Proportion-mediated = 34%, $p < .01$).

Discussion

This study is part of a large trial, which is the second trial testing the effectiveness of the strategies and the first trial to also test the strategies implementation mechanisms. Overall, our trials have observed favourable effects on guideline fidelity, and school staffs' health and psychosocial work environment. At what stage can a decision be made to scale-up the strategies, what should this decision be based on and how should one proceed?

Challenges

A challenge has been to conduct the trial during the COVID-19 pandemic and make ad-hoc adaptations to provide part of the workshops online, which is a deviation from the study protocol. Implementation teams, however, appreciated this change, making it easier for them to attend the workshops.

