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How to develop a regional supportive environment for school health promotion: Evidence from a multiple case realist evaluation

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How to develop a regional supportive environment for school health promotion: evidence from a multiple case realist evaluation

Abstract

This working paper presents the evaluation of a school health promotion intervention using the realist evaluation framework. It looks at an intervention developed and tailored to the French context and implemented from 2008 to 2011 in 6 sites across France. This intervention aimed to develop a supportive environment for school health promotion through the implementation of local support services; the provision of training and support for schools; the improvement of the health promotion knowledge of local stakeholders; and the development of local partnerships.

A realist evaluation approach was chosen for its potential to deal with the complexity of such intervention and for acknowledging the importance of context. A multiple methods approach was used. Data was collected through literature reviews and from interviews, focus groups as well as written documents. A multiple case-study design was used considering each site as a case.

Carried out about fifteen years ago, our findings are still relevant in the current context of the implementation of a Health Promoting School approach at the national level (since 2018). They highlight the configurations allowing the development of health promotion supportive environments for schools at intermediate level and should inform public health and education policy makers and practitioners. It also discusses the idea that generalising an intervention requires being cautious about the interaction between the intervention and the context in which it is developed to trigger the mechanisms that would ensure success.

Moreover, this study also provides methodological insights to use a realistic evaluation framework to assess the implementation of complex social interventions such as school health promotion ones. Indeed, using a realist evaluation approach is a complex, lengthy and time-consuming process that can be complicated for non-specialists to understand. Three main challenges are then discussed: the definition of the core components of the realist framework, the construction of the Context-Mechanism-Effect configurations and the issue of making the realist evaluation framework and its results accessible to all stakeholders.

Keywords: Health promotion, implementation, supportive environment, school, realist evaluation.

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Foreword

This working paper presents the evaluation of a school health promotion intervention using the realist evaluation framework. After presenting the context and the intervention, we provide details regarding the choice of the realist approach to evaluation and its operationalisation, then the results produced, before proposing a discussion of the object of the study and of the methodological approach used. This research was carried out between 2008 and 2012.

Since then, the legal framework has evolved from an approach focused on risk factors or health thematic (oral health, vaccination control, smoking, etc.), to a more comprehensive approach taking the form of an educational health pathway (2016) and then, more explicitly, to a Health Promoting School approach (2018), supported by both Health and Education Ministries. If a framework exists today, associated with measures to support the implementation of the approach from the national level to schools, passing through academic and departmental levels, this evolution nonetheless constitutes a paradigm shift in the way relationships between health and school are considered (Guével et al., 2024). By focusing on the intermediate level of teams that support schools, the work presented in this working paper remains relevant to inform reflections on the necessary conditions for the implementation of these socio-ecological approaches.

I. Background

The contribution of schools to the health and well-being of pupils and more generally to the health of the population has become more widely recognized (Jourdan et al., 2021; OECD, 2010; Sawyer et al., 2021; L. St Leger, 2004). The scientific literature emphasizes the relevance of health promotion programmes within the school system to achieve this goal. Concepts, such as the *Health Promoting School* (St Leger & Young, 2009; Turunen et al., 2017) or the *Comprehensive School Health* (Allensworth & Kolbe, 1987), have been developed to support school communities in addressing health issues. These approaches involve a close partnership between the health and education sectors (St Leger et al., 2007; St. Leger, 2023) since they often share some objectives in terms of child well-being (Lee et al., 2005).

In the past decades, schools have been a major setting for implementing health promotion initiatives and the scientific literature tends to show some positive achievements of such initiatives on pupils' health and schools' organisation (Mukoma & Flisher, 2004; St Leger et al., 2009; Stewart-Brown, 2006). The synthesis undertaken by Stewart-Brown (2006), shows that health promoting school approaches were found to have a beneficial effect on: the social and physical environment of the school, staff development, provision of school meals, provision of exercise programmes, and the school's social climate. In their literature review, Mũkoma and Flisher (2004) specify that impact can also be observed at a school level in terms of political and organisational development to support health promotion implementation, its integration within the curriculum and the involvement of parents and community. The literature also presents a body of evidence regarding the factors that influence the quality of

health promotion initiatives implemented in the school setting (St Leger et al., 2007). Literature reviews carried out in the past few years agree on several factors as essential for the success and the quality of these initiatives (Lister-Sharp et al., 1999; Peters et al. 2011). They identified three main aspects: (1) involvement of the school community as a whole and addressing all the aspects of school life; (2) addressing the school social environment (relationships between pupils and staff, among pupils, among staff and between parents and schools); (3) development of children's life skills.

The literature also highlights the importance of providing support to schools that wish to endorse such approaches (Bond et al., 2001; Han & Weiss, 2005; Leurs et al., 2008; Peters et al., 2011; Rothwell et al., 2010; St Leger, 1999) as well as enhancing capacities of practitioners whose role is to support schools in this process in order to improve the quality and the sustainability of the approaches implemented (Anderson-Butcher et al., 2010; Bond et al., 2001; George & Kincaid, 2008). Indeed, for successful implementation of school health promotion projects, schools need to develop their own capacities but are dependent on resources and supporting structures from their local environment (Deschesnes et al., 2003; Gugglberger & Dür, 2011; Hoyle et al., 2008).

In France - a national and centralized system - schools do not often set a priority on health issues and professionals in the workplace are not always aware of their role in promoting the health of pupils although it has national framework texts for the development of health promotion (Pommier, Jourdan, et al., 2010). Furthermore, research and initiatives to develop health promotion in schools often focus on the role of the professionals in schools, in particular the educational role of teachers or the involvement of school nurses; but do little to examine, from a systemic point of view, the resources and structures in the local environment that can support them in their health promotion initiatives (Guével et al., 2024). Therefore, based on the findings from the school health promotion literature and to ensure that health promotion in schools is more sustainable, intervention research has been developed with the support of *l'institut national de prévention et d'éducation pour la santé* (INPES) to develop an experimental intervention tailored to the French context in 6 of France's 22 regions. The intervention component involved developing an intervention for a regional support environment for school health promotion. The research component focused on evaluating this initiative to inform public health and education policy makers and practitioners regarding the implementation of a regional supportive environment for school health promotion.

1.1. A school health promotion intervention tailored to the French context

The objective of the intervention was to build capacity at the regional level to create regional supportive environment for school health promotion which means the improvement of knowledge and skills among regional practitioners, the development of supporting infrastructures for health promotion and the development of partnerships. These three levels of actions are in tune with the WHO definition of capacity building (Smith et al., 2006). The implementation phase started in 2008 and lasted three years in six regions across France. A project team oversaw coordinating the overall intervention with a mix of bottom up and top-down approaches (Viig, 2005). In each region, a support service was settled within existing

sustainable organisations that have a responsibility either for children's health or for assisting schools on diverse issues. These regional support services first focused on primary schools (children from 3 to 11 years old). They involved school nurses and doctors, teacher trainers, educational advisors as well as members of local non-governmental health promotion organisations. The regional support services were provided with training, resources and support before and throughout the three years of the implementation process. The training was based on knowledge development and experience sharing on health promotion practices. Table 1 presents the intervention delivered to regional support services. The overall project is described in detail elsewhere (Guével et al., 2015; Pommier et al., 2011; Pommier et al., 2010).

Table 1 Description of the intervention delivered to support services by the project team

Objective of the intervention	To build capacity at the regional level to create a regional supportive environment for school health promotion
Implementation	2008-2011
Activities	
<i>Training</i>	<ul style="list-style-type: none"> • Prior to implementation: 4 days focused on how to deliver training, advice and support for school staff regarding the principles, values, resources and evaluation of school health promotion • First year of implementation: 2 days focused on partnership development and health promotion teaching tools* • Second year: 1 day focused on school-family relationship* • Third year: 1 day focused on conflict management* • After implementation: 1 day focused on the assessment of the implementation process and to share first results of the evaluation
<i>Support</i>	<p>* <i>Issues raised by support services during the implementation process</i></p> <p>Throughout the implementation process, the project team also provided support to the regional services through email exchanges, phone calls and field visits. It included:</p> <ul style="list-style-type: none"> • Networking and experiences sharing • A focus on fundraising opportunities • Each year, provision of data on the regional situation regarding teachers' health promotion practices and children's perception of their well-being at school (data collected through questionnaires in voluntary schools) • Discussions on the development of strategies to disseminate school health promotion approach within school communities • Knowledge transfer with the provision of updated evidence from the scientific literature
<i>Provision of material resources</i>	At the beginning of the implementation process, regional support services received a set of pedagogical resources and teaching tools. These tools were adapted to the French context, it included, amongst others: resources on children's literature, on physical activity and on how to develop school health promotion projects.

II. Methods

2.1. Evaluation framework

Despite promising evidence that will improve the health of both individuals and populations, health promotion stakeholders continue to find themselves up against a ‘chronic problem’ when it comes to evaluating complex health promotion interventions, offering proof of their added-value, and ensuring knowledge transferability (Keshavarz Mohammadi, 2019, 2021). Moreover, health promotion is closely related to public decision-making processes that are deeply influenced by evidence-based thinking within a context of limited resources. Health promotion research and evaluation, especially within the school setting (L. St Leger et al., 2007), are therefore urged to address these challenges, moving beyond both theory and ideology.

Authors (Nutbeam, 1998; Rootman et al., 2001; Tones & Tilford, 2001) pointed out further issues relating to the evaluation of HP: the complexity of the causality between health promotion programmes and their effects, and the unsuitability of the experimental evaluation process for the health promotion values enshrined in the Ottawa Charter, i.e. the holistic nature of health promotion interventions and the values of participation, collaboration and empowerment. Potvin et al (2008) identified three main challenges for those evaluating health promotion programs: (1) defining the activity to be evaluated to raise pertinent evaluation questions, (2) implementing an appropriate, rigorous research methodology, and (3) producing pertinent knowledge for actions (Potvin et al., 2008; Potvin & McQueen, 2008).

Since about 30 years, health promotion researchers have sought to develop evaluation approaches that are able to measure the impact of an initiative as well as to understand how this impact is obtained in order to inform the implementation of sustainable health promotion initiatives. More specifically, regarding the evaluation of health promotion initiatives in the school setting and the type of evidence produced by these studies to inform practitioners and policy makers, Rowling and Jeffreys (2006) argued for considering research from both education and health sectors and for trying to articulate evidence from both sectors in order to inform planning and strengthen partnerships. These authors also pointed out the importance of considering contextual issues such as school practice and local policy factors, when evaluating school health promotion interventions (Rowling, 2009; Rowling & Jeffreys, 2006).

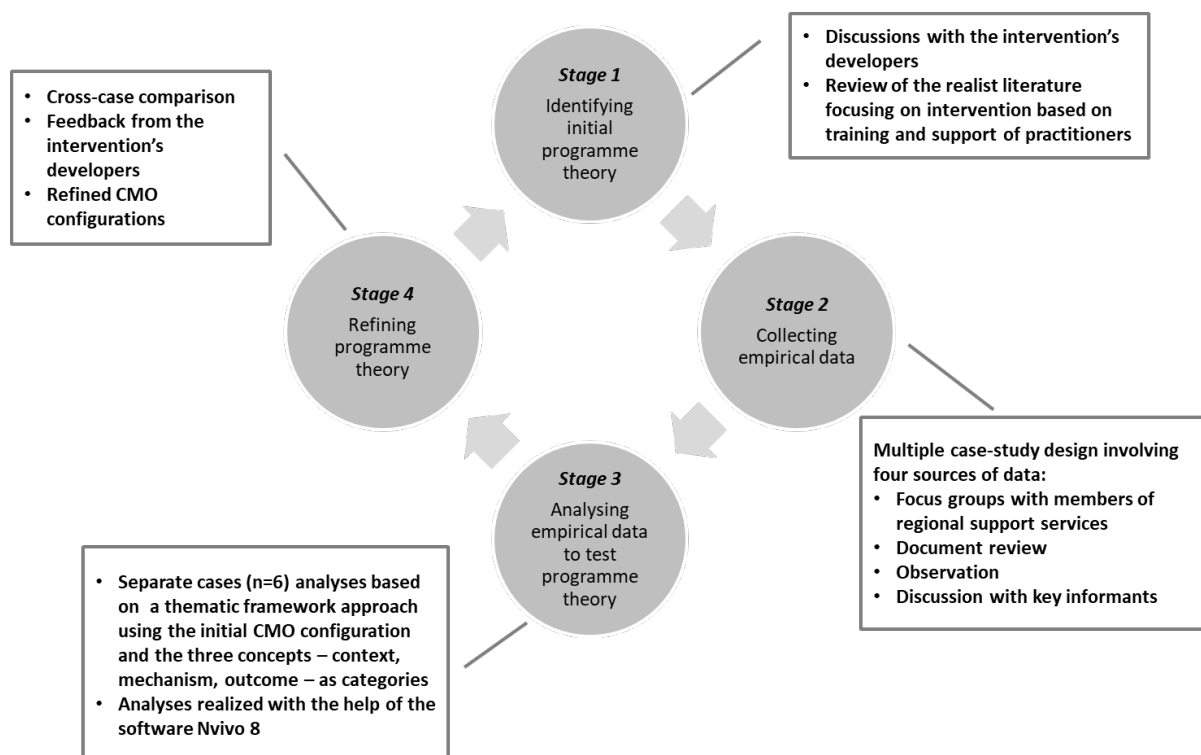
To answer these challenges of addressing health promotion complexing and to develop suitable evaluation approaches, realist evaluation has been one of the most promising frameworks (Frohlich et al., 2022; Jackson, 2023; Louart & Ridde, 2023; Malengreaux et al., 2022). The realist evaluation framework, a theory-driven approach to evaluation developed by Pawson and Tilley (Pawson & Tilley, 1997) has the potential to deal with the complexity of health promotion initiatives. The importance of context is acknowledged in understanding the way in which programmes work. These are challenges in school health promotion that need to be addressed to inform the development of sustainable and transferable initiatives. The realist evaluation framework considers the complexity of social interventions where the programme introduces resources to support change in existing specific contexts. This framework focuses on how interventions work, for whom and under what circumstances. The

realist approach emphasises that it is people that make programmes work. Thus, the resources embedded in an intervention influence the reasoning and acting of those involved. This approach sheds a light on these elements considered as mechanisms which are a core concept of the realist approach. Therefore, the realist approach is designed to get deeper insights into why a programme did or did not work by explaining the complex relationship between the mechanisms triggered by the intervention, the influence of the context and the outcomes produced (Pawson & Tilley, 1997, 2004).

2.2. General study design

Realist evaluation usually involves four main stages (Pawson & Tilley, 2004). For this study, these stages are illustrated in Figure 1. Tables 2 and 3 detail the type of data sources used and the data collection process. The RAMESES II reporting standards for realist evaluation has been developed to lead to greater consistency and rigour in reporting realist evaluation results. The objectives of these standards are also to make more usable the results for different stakeholders. This study complies with those standards (Wong et al., 2016).

Figure 1 : The realist evaluation process implemented in this study – adapted from Pawson and Tilley (Pawson & Tilley, 1997, 2004)



Notes: CMO configuration: Context-Mechanism-Outcome configuration

Stage 1 - Identifying the initial programme theory

This first stage seeks to identify and formalize the programme theory, that is, how the intervention is expected to work. Various sources can be used including data from the intervention's developers, its key stakeholders and participants as well as from previous evaluation or research findings and from the broader literature. This data is used to build hypotheses about the relationships between contexts, mechanisms and outcomes; these hypotheses are known as "context-mechanism-outcome pattern configurations" (CMO configurations). A multiple method approach was used for this stage using discussion with developers of the intervention and a narrative review of the realist literature focusing on interventions based on training and support of practitioners. The two first columns of table 2 summarise the type of data sources used to inform the initial programme theory elements. Table 3a details the data collection process.

Stage 2 - Collecting empirical data

The second stage is to collect empirical data that will allow the initial hypothesis to be tested. The realist evaluation framework does not require the use of a specific method to collect this data; methodological pluralism is acknowledged. A multiple case-study design was used (Yin, 1994). Each region was considered as a case and included in the study.

Four types of data sources were used: focus group with members of regional support services, document review, observation and discussion with key informants. The last columns of table 2 summarise the data collection techniques and how they were used to inform the refined programme theory. Table 3b provides details on the data collection process.

All data were managed and analysed using the QSR NVivo 8 software package. Verbatim cited in this article were translated by the authors.

Stage 3 - Analysing empirical data to test programme theory

The third stage aims to test the hypotheses analysing the data previously gathered. According to Pawson and Tilley, there is no specific analytic method suitable for this purpose. They suggest, as a primary tactic, investigating variations within and across cases by making subgroup comparisons. The initial programme theory guided the identification of emerging themes and provided an initial frame of analysis, considering the three core concepts of the realist approach – context, mechanism and outcome – as categories. Data were classified and organised according to key themes, concepts and emergent patterns. Each case was first examined as a whole, and the six cases were then compared with each other. We looked for evidence threads that suggested the different ways in which the proposed mechanisms unfolded, the associated contexts and ensuing outcomes. Based on an iterative process carried out by the first author in collaboration with co-authors, we proceeded as follows. First, we systematically classified the data from the different sources (focus groups, document review, observation and discussion with key informants). Based on the initial programme theory, we identified and described extensively the intervention, the outcomes, contexts and mechanisms.

The coding frame evolved as relevant issues emerged. A table was developed for each case. Then, we analysed the interactions between contexts, mechanisms and outcomes to identify the conjectural CMO configurations that explained the observed outcomes related to the development of a regional supportive environment for school health promotion.

Stage 4 - Refining programme theory

The fourth and final stage is to refine the initial programme theory through the assessment and interpretation of the analysis to provide statements on how the intervention works (or not), for whom and in which contexts. In the last step of each case-study, the conjectural CMO configuration was compared to the initial programme theory to formulate a plausible explanation of how the intervention had worked in each region. After finalising this in-case analysis, we carried out a cross-case analysis of the findings. This helped in assessing whether and how the same mechanisms play out in similar or different contexts to produce similar or different outcomes. We then formulated a refined programme theory.

Quality and ethical considerations

To ensure the quality of our study, we compared our design to the criteria for qualitative research developed by Miles and Huberman (Miles & Huberman, 1994). These authors suggested five categories of criteria and, for each of them, a series of questions as a guide for the qualitative researcher to ensure the quality of his/her work. We used this guide throughout the study: for example, triangulation of data sources was used to strengthen the analysis; the results were discussed among the authors and preliminary results were presented to other researchers and participants.

The overall intervention was approved by the regional educational authorities. The ethics committee of the intervention validated the whole data collection process and the project was registered at a national ethics committee, the “*Commission nationale de l’informatique et des libertés*” (CNIL), the French national commission on data protection and liberties (registered number 1332359). The research and the monitoring process were explained to all the participants before of the intervention started.

III. Results

3.1. Initial programme theory

The multiple method approach used at this stage yielded to the following initial programme theory (Figure 2):

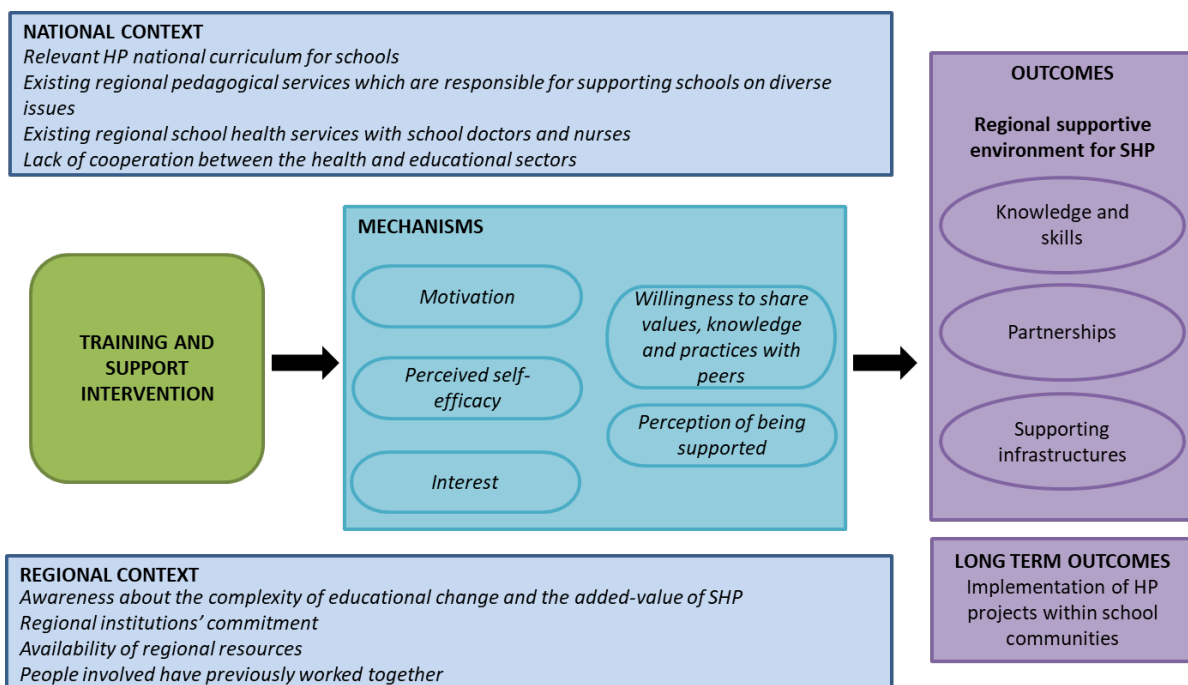
Introducing an intervention based on training and support for regional stakeholders (intervention) in a context with (a) a relevant health promotion national framework for schools, (b) existing regional pedagogical services which are responsible for supporting schools on diverse issues, (c) existing regional school health services with school doctors and nurses, and (d) awareness of the regional stakeholders about the complexity of educational

change and about the added-value of health promotion for school communities (contexts) will contribute to build capacity at the regional level to create a supportive environment for school health promotion (outcome) - including the enhancement of knowledge and skills among practitioners, the development of supporting infrastructures for school health promotion and the development of partnerships - to support the dissemination of health promotion projects within school communities (long term outcomes). Other important dimensions of the context are regional institutions' commitment to school health promotion approaches, the fact that people involved in the regional support services have previously worked together and the availability of regional resources (contexts). Lack of cooperation between the health and educational sectors (contexts) could undermine the effect of the intervention.

The intervention increases perceived self-efficacy, motivation, interest for school health promotion among the members of support services, their perception of being supported as well as their willingness to share values, knowledge and practices with peers (mechanisms).

This initial programme theory was then tested in each of the six sites involved to be refined.

Figure 2: The initial programme theory underlying the development of local supportive environment for school health promotion through intervention based on training and support



Notes: HP: Health promotion, SHP: School health promotion

Intervention and Contexts

The intervention described in table 1 was offered to all the six regional support services. However, we observed differences in the level of involvement through the three years of implementation of the intervention. Table 4 describes the main differences in the six cases regarding contexts. For example, the members from the support service of Region 1 did not take part to the training sessions but used the support provided as well as the material resources. Attendance of all the members of the support services from Regions 3 and 6 also varied through the project due to a high turnover of some of their members.

We observed similarities regarding regional contexts. In all regions, financial resources were available to support the development of a supportive environment for school health promotion. However, institutional commitment from the regional educational authority, the teacher training college and the regional health authority varied from one site to another: for example, the regional educational authority's commitment was high in Regions 5 and 6, low or very low in Regions 1, 2, 3 and 4.

Similarities were also observed regarding characteristics of regional support service's members. Representatives from the educational sector (from teacher training colleges and school districts – where educational advisors work) were involved in the six sites. School health services were involved in five of them and non-governmental health promotion organisations in half of them. In Region 1, a local research team specialized in school health promotion took the lead in developing the regional support team, however researchers' objectives were slightly different from educational advisors' ones. In Region 6, people from two different geographical areas were involved: in one area, the school health service and educational advisors were used to working together on school health promotion; in the second area, the educational advisor was alone.

3.2. Mechanisms

We found that in most regions, the intervention triggered individual mechanisms such as perceived strengthened self-efficacy (Regions 1, 2, 4, 5 and 6), perceived strengthened motivation (Regions 1, 4, 5 and 6) and perceived strengthened competencies (Region 6). As the following quotes illustrate:

“Because [...], I've also looked at books, media, thesis, things like that, for philosophical support, scientific support, we are not going to simply state what we [personally] think.” (Educational advisor, Region 6)

“It makes me want to continue in that direction. I tell myself, yes, I feel we are at the beginning of something [...].” (Regional NGO, Region 5)

The following mechanisms were also identified as can be played out by the intervention: feeling of having a common understanding of school health promotion within the regional support service (Regions 2 and 5); willingness to develop school health promotion at the regional level (Regions 4 and 5); perceived benefits for school communities and children (Regions 4, 5 and 6) and school health promotion perceived as a relevant theme to work on (Region 1). As the following quote illustrates:

“This project, I think, is important to me because it meets our practices as health professionals, and we have worked on it since about twenty years. However, there are still several things that need to be developed: health education from the first year of schooling to the last one, in a dynamic which is carried by several professionals.” (School nurse, Region 4)

Moreover, encouraging support services to develop a collaborative work and partnerships (intervention activity) triggered mechanisms such as recognizing the value of working together (Regions 1, 2, 4 and 5), willingness to support each other (Region 1), recognition the importance of opening the team to new comers (school health service) (Region 4) and recognition of the value of the partnership with regional institutions already involved in SHP (Region 2):

“Going to schools [together]. I think it helps me reflect on my practice and on team collaboration. [...] I see how I used to be in schools at the beginning and how I am speaking now, it has changed a lot. Methodologically too, how to get things together.” (Teacher trainer, Region 5)

Within a similar pattern, gathering the regional support services together (intervention activity) triggered a mechanism of recognition other support services’ experiences (Regions 2, 3, 5 and 6).

Feeling free to build their own projects based on the intervention framework (Regions 1, 4, 5 and 6) was also identified as a key mechanism by support services’ members:

“And, I think it has also brought positive insight into the project, to see that others had problems but that some solutions were found. Finally, things unfolded differently in the regions. [...] even if there is an initial frame [delivered through the intervention]. Each [region] can work according to its possibilities. That I found very interesting.” (Teacher trainer, Region 4)

In Region 3, we found specific mechanisms triggered by the interaction between the intervention and the specific context of Region 3 where some members were not volunteered, where members had different level of knowledge about school health promotion and with a lack of commitment at the regional level. This situation ended up generating resistance to get involved for some members, generating disagreement and tensions within the regional support service. The members also felt that regional out of school stakeholders were distant and not willing to get involved as partners.

In regions where members of the regional support services had already knowledge and skills in school health promotion, the intervention, and more specifically the training part of the intervention, triggered mechanisms such as perception of pre-existing skills as sufficient (Region 1) or perception of training sessions from the intervention as useless (Region 4):

“I felt, too, sometimes - it is perhaps the culture we had, too, our work - we already knew. That is to say that it seems that there is nothing new under the sun.” (Teacher trainer, Region 4)

Within a similar pattern, when partnerships were already developed, perception of pre-existing partnership as sufficient was highlighted (Region 1) or lack of motivation to develop new partnerships (Region 6) are mechanisms that might be triggered by the intervention. Table 5 summarises the mechanisms triggered in each case.

3.3. Emerging CMO patterns

Indeed, context-mechanism patterns are here emerging from the analysis. Linking these patterns with observed outcomes (see table 6 for a presentation of the outcomes observed in each region) led to the identification of CMO patterns based on the WHO's definition of capacity building: improvement of knowledge and skills among practitioners, creation of a regional support service and provision of training and materials to schools both as supporting infrastructure, as well as development of partnerships.

Improvement of knowledge and skills

The improvement of knowledge and skills of members of support services did indeed not happen in all the six regions. In Regions 1 and 4, poor or no development of news skills were observed. In these regions, competencies in school health promotion were perceived as already present and members from the local support service perceived the intervention did not increase them. On the contrary, in the other four regions, knowledge and skills have been perceived as enhanced. In these regions, members of the regional support services could have had or not some background in school health promotion or related subjects, but they had a wish to work on a school health promotion approach. For example:

“It helped me to reflect on these [health promotion] issues and to get into it”
(Teacher trainer, Region 2).

People recognized the value of sharing other experiences:

“[...] to see how we are, compared to the other services, to know, to learn from other experiences, to get new ideas” (School doctor, Region 6).

Most of participants also felt it was important to have a common understanding of school health promotion.

Creation of a regional support service

In all the six regions, regional support services have been created but their composition and the way they worked were slightly different. People recognized the value of working together and perceived strengthened motivation as suggested by one of the education advisors involved in Region 4:

“Working with people who have the same area of interest, the same motivation on a project like this one [i.e. the school health promotion intervention implemented] and to get others' points of view, changes the way I think and that can then feed into to my own activity” (Education advisor 1, Region 4).

When the members of the support service already knew each other and had some experience of working together, the way the service worked was more collaborative. In two regions (Regions 2 and 5), the leadership of the teacher trainers was found to be better. They took charge of the regional support services and advocated for a regional intervention by seeking financial resources and developing regional partnerships. In Region 3, members did not know each other before the intervention started, some of them did not volunteer and there was a high

turn-over of the education advisors involved. This service experienced disagreement and tension. As a result, it did not function collaboratively. It ended up with training sessions prepared separately by each member and disagreement on the content of sessions as suggested by one member of this service:

“On the health education approach to physical activity, there was a training session with contents which I completely disagreed with” (Teacher trainer, Region 3).

Development of partnerships

In Regions 4 and 5, strong partnerships were developed with local non-governmental organisations and even with municipalities in Region 5. Municipalities oversee the school premises; they also provide schools with staff, for example, to help with younger children and to cover extracurricular periods such as lunch time or before and after classes. In Region 5, they developed common training sessions for all school staff. Members of these two regional support services were willing to help develop school health promotion at the regional level and they perceived the benefits of such partnerships for school communities and children. In these two regions, partners had already worked together or were strongly willing to get involved. In the other regions, partnerships were weaker such as in Region 2 where regional partners were involved in the regional steering committee and in training sessions (but difficulties appeared in harmonising working practices), and they remained informal such as in Region 6 or were not developed as in Regions 3 and Region 1 where they relied on pre-existing partnerships.

Provision of training and materials to schools

All regions provided schools with training and material resources but almost no support:

“I come back to it but I am disappointed that I was not able to be there as much as I would have wished to support schools in what they were doing” (Education advisor 2, Region 6).

The length of training sessions varied from one region to another (from 6 hours the first year in Regions 2, 4 and 6 to 21 hours in Region 1) as well as the content. All support services included debates on attitudes toward school health promotion, school social environments and individual health skills within their training framework. Links with health services were addressed in five regions (Regions 1, 3, 4, 5 and 6). Healthy school policies were discussed in Regions 3, 4 and 5; links with the community partners in Regions 2, 4 and 5. Training sessions in Regions 1 and 5 dealt with links between school and families. School physical environments were only addressed in Region 4. In Regions 4 and 5, the training sessions were co-developed with regional partners. Perceived strengthened self-efficacy and the fact that people felt free to build their own interventions based on the frame suggested by the project team were key mechanisms. Contexts identified as playing a key role referred to strong support from regional institutions (especially from the regional educational authority), skills and knowledge of the regional support service as well as the availability of financial resources. The perception of a high workload was considered as an obstacle to intervening in schools as

the members of the regional support services had to continue their daily work. Most of them did not have specific time dedicated to the project:

“unfortunately, this intervention is not the only project that an education advisor has to manage [...] multiple tasks mean there are peaks, times when one is more invested. And there are other times that everyday work is taking up” (School doctor, Region 6).

IV. Discussion

4.1. The findings

The objective of this work was to collect evidence about the conditions in which a training and support intervention aimed at building capacity at a regional level to create supportive environment for school health promotion could be successful. The general findings of our realist evaluation align with results from other studies in various field of research including health promotion and educational change and are not surprising nor new (Hoddinott et al., 2010): a same intervention can unfold differently depending on contexts even in a national and centralized system such as the French system; an intervention can be more effective in some contexts than others; and the interactions between the intervention and the context are essential.

The added value of our study lies in the in-depth understanding of how an intervention aimed at building health promotion capacity at a regional level can work for which kind of regional support services and under what circumstances, based on a six-case study. Our findings can be summarised by the refined theory programme which can be formulated as follows (see also figure 3):

To allow the creation of a regional support service with a collaborative way of working, with the willingness to welcome people from different institutions both from inside and outside the education sector (outcome), its members recognize the value of working together (mechanism) and perceive strengthened motivation (mechanism). This will happen in a context where most of the members know each other previously and are used to working together. The members have to be volunteers and convinced by the value of school health promotion (contexts).

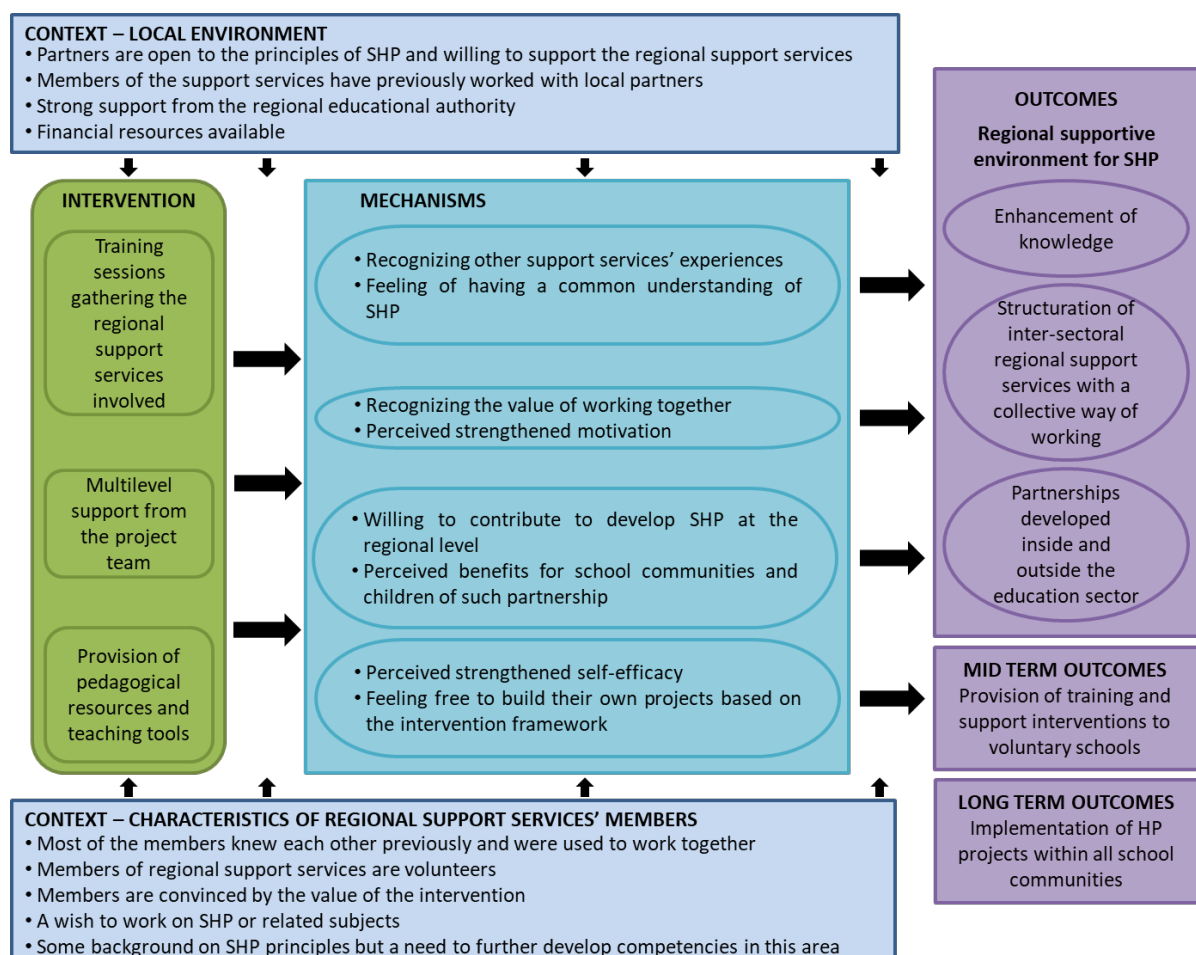
When members of a regional support service have a wish to work on school health promotion or related subjects (context) and have some background on school health promotion principles but a need to further develop their competencies in this area (context), the intervention will enhance their knowledge in school health promotion (outcome), through the recognition of the experiences from other support services (mechanism) and through a common understanding of school health promotion concepts (mechanism).

When partners are open to the principles of school health promotion and when service's members have previously worked with them (context), support services are willing to contribute to developing school health promotion at the regional level (mechanism) and perceive the benefits for school communities and children

of such partnership (mechanism). As a result, the regional support service develops partnerships with partners from inside (teacher training college, school health service and school districts) and outside the education sector (municipalities, non-governmental organisations in the field of health promotion or in the field of popular education) (outcome).

As a result of this supportive environment and in a context with a strong commitment from the regional educational authority and financial resources available (contexts), the regional support service provides schools with material resources and with training sessions dealing with the main components regarding health promoting schools (outcomes). The members of the support services perceive strengthened self-efficacy (mechanism) and feel free to build their own projects based on the intervention framework (mechanism).

Figure 3: The refined programme theory underlying the development of local supportive environment for school health promotion through intervention based on training and support



Notes: HP: Health promotion, SHP: School health promotion

This study was the first of this kind carried out in France in the field of school health promotion. It highlights some key elements influencing the successful development of a regional supportive environment for school health promotion. Indeed, the decisive role of a strong commitment from the regional educational authority as well as from the broader local environment (especially from potential partners) was put forward as it has been shown in various fields of research (O'Campo et al., 2011; Priest, 2006; Ranmuthugala et al., 2011) including health promotion (Leurs et al., 2008; Rothwell et al., 2010) and educational change (Waldron & McLeskey, 2010). These different aspects were also mentioned by Rothwell and her colleagues (Rothwell et al., 2010) in their study focusing on the project *Welsh network of healthy schemes*, a project with a structure - national/regional - similar to the intervention studied in this article.

Another key element from the context is the fact that members of the regional support services knew each other and had some common understanding of the issues related to school health promotion prior to the intervention. These could have a tremendous impact on how we are used to think about the implementation of health promotion interventions and how to consider temporality.

Associated with these contexts, the mechanisms triggered by the intervention are the capacity to recognize others' experiences and expertise (Ranmuthugala et al., 2011; Steven et al., 2007), the perception of strengthened motivation and self-efficacy (Kane et al., 2010) as well as of the benefits of school health promotion (Dieleman et al., 2009). These mechanisms can also be found in the health promotion and educational change literature in particular regarding team work (Bond et al., 2001; Rowling & Jeffreys, 2006). However the interest of this study is not to just list these mechanisms, as often presented in the literature, but to articulate them in the CMO configurations, linked to the specificity of the realist evaluation and its ambition to explain the complex relationship between the mechanisms triggered by the intervention, the context that influences how they work and the outcomes produced through the production of a refined programme theory to better understand how such interventions work and unfold under real conditions. Unexpected outcomes were identified such the development of the leadership of some teacher trainers, calling for more research to further refine the programme theory.

4.2. Methodological considerations

At the time this study was carried out, the realist literature was relatively recent; there was a relatively small body of work that covers a wide range of domains especially in the health research area (Marchal et al., 2012). Since then, the literature has expanded, particularly in the field of health promotion research (Jackson, 2023; Louart & Ridde, 2023; Malengreaux et al., 2022). These authors still point out several challenges that we have faced throughout the overall study. Using a realist evaluation approach is a complex, lengthy and time-consuming process that can be complicated for non-specialists to understand (Jackson, 2023; Louart & Ridde, 2023; Malengreaux et al., 2024).

The first challenge is the definitions of the three core concepts of the realist evaluation - context, mechanism and outcome. They are still debated, even if much work has been undertaken to deepen the concepts (Astbury & Leeuw, 2010; J. Greenhalgh & Manzano, 2022; Lacouture et al., 2015; Marchal et al., 2010; Timmins & Miller, 2007). The concept of mechanism was the most challenging. As some authors highlight, it is difficult to identify the mechanisms of change (Dalkin

et al., 2015; T. Greenhalgh et al., 2009). The mechanisms identified in this study are the result of a long process of iterative discussion, going back and forth to the data and to the realist literature to better capture the sense of a mechanism to explain how the intervention unfolded. As Malengreaux and colleagues (2024), we found challenging not to reduce the mechanisms to an individual level, but to integrate a collective dimension into their activation, in line with the principles of health promotion (Malengreaux et al., 2024).

Another challenge was the construction of the CMO configuration (Greenhalgh et al., 2009; Ho, 1999) since the interventions evolve over time and are in permanent transition (Byng et al., 2008; Mark & Henry, 2004) and as a diversity of data sources was used to gain the stakeholders' different perspectives (Renmans & Castellano Pleguezuelo, 2023). For example, this was the case for the enhancement of knowledge and skills of support service members that was an outcome and became a context when looking at the provision of a health promotion intervention for schools. Finally, we had to be very cautious not to over-simplify our proposed CMO configurations in order to keep the potential of the realist approach to help understand the complexity of social interventions such as health promotion ones (Davis, 2005).

Finally, the last aspect that we were confronted with, and that we did not address directly, was the issue of making the framework of realist evaluation and its results accessible to all stakeholders. The time taken to familiarise with the approach was such that it was not possible to work on this dimension in the time available for the research. Realist evaluation is a highly technical approach which requires mastery of both the framework and a range of data collection techniques, which raises the question of the possibility of moving from use in the academic field to use by other stakeholders in public policy and intervention evaluation (Jackson, 2023; Louart & Ridde, 2023). This is a particular issue in health promotion, where the participation of all is seen as a key principle. To meet these challenges, the role of mediator is beginning to emerge in the literature (Malengreaux et al., 2024).

Research is still needed to go further in these conceptual and practical reflections to strengthen the use of the realist evaluation approach and to fully benefit from its potential to explain how social programmes work (Dalkin et al., 2015; Malengreaux et al., 2022; Marchal et al., 2012).

Conclusion

In France, there are many institutional national texts favourable to the development of health promotion approaches in the school setting (Pizon & Jourdan, 2009) which have been strengthened in recent years with the health education pathway and the health-promoting school approach. Even if there has been large investment on school health services, many studies have pointed out the difficulty of the French schools in implementing these approaches (Darlington et al., 2017, 2018; Simar & Jourdan, 2010). The results of this realist evaluation study contribute to a better understanding of how a health promotion supportive environment could be developed within the French education system and are intended to lead to better focused and more effective health promotion programmes.

The realist evaluation is an “explanatory quest” (Pawson and Tilley, 2004). The realist cycle of testing and refining programme theories used in this study stress valuable information for

decision-makers and practitioners that wish to support school health promotion in their own context. Three sets of conclusions can be highlighted.

(1) This study confirms the possibility to foster a dynamic and to build capacity at the regional level to create regional supportive environment for school health promotion. Training and support of regional support services then seem to be relevant strategies.

(2) The findings enlighten conditions that should be considered when thinking about transferability and implementation of such a complex intervention to develop a supportive school health promotion environment. It involves to first explore the implementation context and to identify whether the conditions suggested by the results of the realist evaluation are aligned. If not, then, the intervention should be adapted. For example, if members of the support service have never work together before the creation of the service, time and specific strategies will be needed to be support the development of a collaborative way of working. On the contrary, if you already have a high-level team with competencies in school health promotion, basic training may not be the most relevant strategy to help them.

(3) Finally, the results of this study pointed out the links between mechanisms and expected outcomes. If the implementation of the intervention as designing is not possible for some reasons, this kind of information may also help to identify the strategies than can active the expected mechanism.

Indeed, this body of findings gives insights to prioritise area of work and to avoid loss of time and resources before and during the implementation of an intervention to develop regional health promotion supporting environment. This is especially relevant in the current socio-political environment, which is a complex, often rapidly changing and includes budget cuts for regional public health programmes, and less training opportunities for schools raising the question of how these supportive environments can be sustained.

In this perspective, the recycling process of realist evaluation and provisional characteristic of its results maybe be an opportunity to deal with this issue and to unsure the improvement of the relevancy and the quality of an intervention. Further research is therefore needed.

Annexes

Table 2: Overview of data sources

Programme theory elements	Initial programme theory		Focus group with members of regional support services	Refined programme theory			
	Discussion with developers of the intervention	Review of the realist literature		Document review		Observation	Discussion with key informants
				from regional support services	from the project team		
Context	X	X	X	X	X	X	
Mechanisms	X	X	X			X	
Outcomes	X	X	X	X	X		
Intervention	X		X		X	X	

Table 3: Details of the data collection process

Table 3a: Details of data collection process for the initial programme theory

Method	Key informants	Number of key informants	Length and place	Tools	Purpose
Discussion	Head of the research team	1	<ul style="list-style-type: none"> In total 2 working days University office 	<ul style="list-style-type: none"> 2 interviewers Field notes 	<ul style="list-style-type: none"> To understand the genesis of the intervention To understand how the intervention is intended to work to be sustainable To identify factors that may influence the implementation of the intervention
	Researchers	3	<ul style="list-style-type: none"> In total 1 working day with each researcher 	<ul style="list-style-type: none"> 2 interviewers Field notes 	<ul style="list-style-type: none"> To understand how the intervention is intended to work

			<ul style="list-style-type: none"> • University meeting room 	<ul style="list-style-type: none"> • To identify factors that may influence the implementation of the intervention
	Educational advisors	2	<ul style="list-style-type: none"> • 2h discussion with each person • University meeting room 	<ul style="list-style-type: none"> • 2 interviewers • Field notes
	Coordinator of school health promotion projects	1	<ul style="list-style-type: none"> • 4h discussion • University meeting room 	<ul style="list-style-type: none"> • 2 interviewers • Field notes
Literature review	Narrative review of the realist review focusing on interventions based on training and support of practitioners	-	<ul style="list-style-type: none"> • Data based searched: Academic Search Complete, ERIC and Medline • Languages and dates: English and French between 1997 and 2011 • Keywords: realistic/realist evaluation AND education, realistic/realist evaluation AND training, realistic/realist evaluation AND health promotion • Additional search technique: snowball technique through the references of the articles identified • Selection criteria: using a realist evaluation approach or a realist synthesis, focusing on training and support interventions, providing information on CMO configurations • Selection process: first selection through abstract reading and through articles reading 	<ul style="list-style-type: none"> • To identify the potential CMO configurations that may be relevant for interventions based on training and support of practitioners

- Results: 86 articles identified; 13 articles selected (see Additional file 1 for a presentation of the 13 articles)

Table 3b: Details of data collection process for the refined programme theory

Method	Key informants	Number of key informants	Length and place	Tools	Purpose
Focus group	Members of regional support services	38 (5 Site 1, 6 Site 2, 4 Site 3, 9 Site 4, 7 Site 5, 7 Site 6)	<ul style="list-style-type: none"> • One per site • 30 min – 2h • Meeting room of the support service (university or regional educational authority building) • At the end of the 3rd year of implementation 	<ul style="list-style-type: none"> • Semi structured interview guide • 1 interviewer • Recorded and transcribed 	<ul style="list-style-type: none"> • To understand the influence of the context, the mechanisms triggered and the benefits and outcomes from the point of view of the support services
			<ul style="list-style-type: none"> • Through the 3 years of implementation • 151 documents (44 Site 1, 10 Site 2, 16 Site 3, 24 Site 4, 27 Site 5, 30 Site 6) 	<ul style="list-style-type: none"> • Type of documents collected: summary tables, minutes of the local steering committee, minutes of meetings, training documents, applications for financial support 	<ul style="list-style-type: none"> • To describe the context at local level • To describe and measure outcomes of the intervention
Document review	Regional support services' coordinator	6	<ul style="list-style-type: none"> • Through the 3 years of implementation • 38 documents 	<ul style="list-style-type: none"> • Type of documents collected: training 	<ul style="list-style-type: none"> • To describe the implementation of the intervention

				and implementation documents, applications for financial support, minutes of the scientific committee	
			<ul style="list-style-type: none"> • 120 questionnaires 	<ul style="list-style-type: none"> • Questionnaires assessing each training session 	<ul style="list-style-type: none"> • To measure outcomes of the intervention related to knowledge enhancement
Observation	Project coordinator	1	<ul style="list-style-type: none"> • Through the 3 years of implementation • During training sessions and regular contact with the support services (mails and phone) 	<ul style="list-style-type: none"> • Field notes 	<ul style="list-style-type: none"> • To understand how the intervention was implemented • To describe the context at the project level
	Members of the project team	3	<ul style="list-style-type: none"> • Through the 3 years of implementation • Regular contact to monitor the implementation of the intervention 	<ul style="list-style-type: none"> • Field notes 	<ul style="list-style-type: none"> • To understand how the intervention was implemented
Discussion	Support services' coordinator	6	<ul style="list-style-type: none"> • Through the 3 years of implementation • Regular contact by phone 	<ul style="list-style-type: none"> • Field notes 	<ul style="list-style-type: none"> • To understand how the intervention was perceived by the support services • To describe local context • To describe outcomes of the intervention • To identify mechanisms triggered
	Trainers involved in the intervention (not member of the project team)	8	<ul style="list-style-type: none"> • 1h to 2h discussion • Before, during and/or after training sessions 	<ul style="list-style-type: none"> • Field notes 	<ul style="list-style-type: none"> • To describe the implementation of the intervention

Table 4: Main differences between the context of the six cases

	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6
Regional context	<ul style="list-style-type: none"> • REA commitment: very low to HP • RHA commitment: strong, providing a high level of financial resources • TTC commitment: strong leadership • Presence of a research team at the TTC specialized in SHP • Strong involvement of parents' representatives 	<ul style="list-style-type: none"> • REA commitment: low, few opportunities for developing continuous education • RHA commitment: strong, providing financial resources to involve partners • TTC commitment: strong with allocation of specific hours to the teacher trainer 	<ul style="list-style-type: none"> • REA commitment: low, limited time according to educational advisors to work on HP • RHA commitment: quite strong, providing limited financial resources • TTC commitment: low • Districts reorganisation • Opposition from the REA to work with a local HP NGO • Low interest from the municipalities 	<ul style="list-style-type: none"> • REA commitment: very low • RHA commitment: strong, providing financial resources to involve partners • TTC commitment: almost no support, left before the end of the programme, TTC in difficulties because of the reform of the teacher training • Recognition of the local HP NGO as a key stakeholder at the regional level by the RHA 	<ul style="list-style-type: none"> • REA commitment: strong • RHA commitment: strong, providing financial resources to involve partners • TTC commitment: medium • Strong support from the municipalities 	<ul style="list-style-type: none"> • REA commitment: strong • RHA commitment: strong, providing financial resources • TTC commitment: low, left before the end of the programme • SHP projects had already been carried out in the region • Pre-existing informal network of partnership
Characteristics of regional support service's members	<ul style="list-style-type: none"> • Institutional affiliations: TTC (2), SD (3) • Turn-over of educational advisors • Appointment of a regional coordinator • Researchers' objectives were slightly different 	<ul style="list-style-type: none"> • Institutional affiliations: TTC (1), SD (3), SHS (1), HP NGO (1) • A wish to work on SHP or related subjects • Teacher trainer and educational advisors have 	<ul style="list-style-type: none"> • Institutional affiliations: TTC (1), SD (3), SHS (1) • Some members were not volunteers • Members with different levels of knowledge on SHP principles • Turn-over of educational advisors • Members did not know each other before 	<ul style="list-style-type: none"> • Institutional affiliations: TTC (2), SD (5), SHS (1), HP NGO (1) • High level of competencies in HP • Most of the members were used to working together on HP • Local HP NGO had worked with one educational advisor on a previous similar project 	<ul style="list-style-type: none"> • Institutional affiliations: TTC (2), SD (3), SHS (1), HP NGO (1) • A wish to work on SHP or related subjects • Members with an already good understanding of SHP principles • Members knew each other and were used to working together on various subject related to HP 	<ul style="list-style-type: none"> • Institutional affiliations: TTC (1), SD (4), SHS (2) • Members with some background on SHP or related subjects • A wish to work on SHP • People from two departments involved: in one department, SHS and

from educational advisors' ones	already worked together	<ul style="list-style-type: none"> • A workload perceived as high 	<ul style="list-style-type: none"> • Members convinced by the values of SHP • Workload perceived as high 	<ul style="list-style-type: none"> • Members convinced by the values of SHP • Workload perceived as high • Members were used to working with a local NGO from the field of community education 	<p>educational advisors were used to working together on SHP; in the second department, the educational advisor was alone</p> <ul style="list-style-type: none"> • Turn-over of educational advisors • A workload perceived as high
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Notes: HP: Health promotion, NGO: Non-governmental organisation, REA: Regional educational authority, RHA: Regional health authority, SD: School district, SHP: School health promotion, SHS: School health service

Table 5: Mechanisms triggered in each site

	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6
MECHANISMS	<ul style="list-style-type: none"> • Perceived pre-existing skills as sufficient • Recognizing the value of working together • Willing to support each other • Perceived strengthened motivation • SHP perceived as a relevant theme to work on • Perceived strengthened self-efficacy • Feeling free to build their own projects based on the intervention framework • Perceived pre-existing partnership as sufficient • Perceived lack of motivation to develop new partnerships 	<ul style="list-style-type: none"> • Feeling of having a common understanding of SHP • Recognizing other support services' experiences • Recognizing the value of working together • Perceived strengthened self-efficacy • Recognizing the value of the partnership with regional institutions already involved in SHP 	<ul style="list-style-type: none"> • Recognizing other support services' experiences • Generating resistance to get involved for non-volunteer members • Feeling a lack of support at the regional level • Generating disagreement between members on some of the concepts related to SHP • Generating tensions within the regional support services and disagreement on the development of training sessions • Feeling that stakeholders were distant • Feeling resistance from potential partners to get involved 	<ul style="list-style-type: none"> • Perceived training sessions from the intervention as useless • Recognizing the value of working together • Recognizing the point of opening the team to newcomers (SHS) • Perceived strengthened motivation • Perceived strengthened self-efficacy • Feeling free to build their own projects based on the intervention framework • Will to keep helping to develop SHP at the regional level • Perceived benefits for school communities and children 	<ul style="list-style-type: none"> • Feeling of having a common understanding of SHP • Recognizing other support services' experiences • Recognizing the value of working together • Perceived strengthened motivation • Perceived strengthened self-efficacy • Feeling free to build their own projects based on the intervention framework • Will to keep helping to develop SHP at the regional level • Perceived benefits for school communities and children 	<ul style="list-style-type: none"> • Recognizing other support services' experiences • Perceived benefits for school communities and children • Perceived strengthening competencies already existing • Perceived strengthened motivation • Perceived strengthened self-efficacy • Feeling free to build their own projects based on the intervention framework • Perceived no need to develop partnership further

Notes: SHP: School health promotion, SHS: School health service

Table 6: Outcomes observed in each region

	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6
OUTCOMES						
Enhancement of knowledge	<ul style="list-style-type: none"> Poor development of new skills No participation in the national training programme 	<ul style="list-style-type: none"> Enhancement of knowledge on SHP concepts and training skills (new techniques and tools such as photo language methodology or role-play exercises) 	<ul style="list-style-type: none"> Enhancement of knowledge in the field of SHP for members that were involved from the beginning of the programme No common understanding of SHP principles 	<ul style="list-style-type: none"> No development of new skills 	<ul style="list-style-type: none"> Enhancement of knowledge on specific themes related to SHP such as partnership development, conflict management within groups, school-family relationship and attitudes to SHP 	<ul style="list-style-type: none"> Enhancement of knowledge on SHP concepts and links with related approaches such as community education Better skills to develop HP training addressed to teachers with concrete tools for them to use in their classroom
Inter-sectoral regional support service with a collaborative way of working	<ul style="list-style-type: none"> A 5-person support service with people from the education sector working collaboratively 	<ul style="list-style-type: none"> A support service of 6 persons from the SD, the TTC, the SHS and a local HP NGO Educational advisors and the teacher trainer worked collaboratively but the local NGO left the support service and stayed as a partner Enhancement of the teacher trainer's leadership 	<ul style="list-style-type: none"> A support service of 4 persons from the SHS, the SD and the TTC with a no collaborative way of working Recognition by the REA, by the end of the programme and after, that people at the REA have changed positions, that one of the educational advisors involved is a go-to person for developing SHP projects in other schools 	<ul style="list-style-type: none"> A support service of 7 persons – after the departure of TTC representatives - from the SHS, the school district and the local HP NGO with a collaborative way of working 	<ul style="list-style-type: none"> A support service of 7 persons from the SHS, the SD, the TTC and a local NGO from the field of community education with a collaborative way of working Enhancement of the teacher trainer's leadership 	<ul style="list-style-type: none"> A support service of 6 persons – after the departure of the TTC representative - from the SHS, the SD and the TTC with a no collaborative way of working outside the national meetings, people from the two departments were working separately
Partnership development	<ul style="list-style-type: none"> Low involvement in the steering committee 	<ul style="list-style-type: none"> Involvement of partners from outside the educational field 	<ul style="list-style-type: none"> No partnership developed outside the education sector 	<ul style="list-style-type: none"> Close partnership with a local HP NGO, the school health 	<ul style="list-style-type: none"> Close partnership with a local NGO 	<ul style="list-style-type: none"> No partnership developed outside the education sector –

	<ul style="list-style-type: none"> • Almost no partners from outside the education sector • Almost no involvement of representatives from the REA 	in the steering committee		service and education advisors, development of a local network	from the field of community education	Partnership remained informal
MID TERM OUTCOMES	<ul style="list-style-type: none"> • Training sessions (21 hours the 1st year and then 9 hours per year per teacher) dealing with 5 out of 8 SHP themes • Provision of additional material resources to schools 	<ul style="list-style-type: none"> • Training sessions (8 or 6 hours the 1st year and then 6 hours per year per teacher) dealing with 4 out of 8 themes of SHP • Provision of additional material resources to schools • Participation of partners from outside the educational field but difficulties to harmonise working practices 	<ul style="list-style-type: none"> • Training sessions (15 hours the 1st year and then 6 or 3 hours the 2nd year per teacher) dealing with 5 out of 8 themes of SHP • Each part of the training sessions were built separately by one or two members of the support service 	<ul style="list-style-type: none"> • Training sessions (6 hours the 1st year and then 6 or 3 hours the 2nd year per teacher) dealing with 7 out of 8 SHP themes • Training sessions co-developed with the local HP NGO 	<ul style="list-style-type: none"> • Training sessions (9 hours the 1st year and then 9 hours the 2nd year per teacher) dealing with 7 out of 8 SHP themes • Training sessions co-developed with the local NGO • Provision of additional material resources to schools 	<ul style="list-style-type: none"> • Training sessions (6 or 9 hours the 1st year and then 6 hours per year per teacher) dealing with 4 out of 8 SHP themes

Notes: HP: Health promotion, NGO: Non-governmental organisation, REA: Regional educational authority, RHA: Regional health authority, SD: School district, SHP: School health promotion, SHS: School health service

Additional file

Description of the 13 articles included in the review of the realist literature aiming at identifying the context-mechanism-outcome configurations at play when introducing an intervention based on training and support.

Reference	Description	Contexts	Results Mechanisms	Outcomes
McCormack B, Slater P. An evaluation of the role of the clinical education facilitator. <i>J Clin Nurs</i> . 2006;15:135–144.	<p>T: Results of a study</p> <p>C: The role of clinical education facilitator was developed in a teaching hospital to coordinate nurse education and training.</p> <p>Q: Identify whether these facilitators made a difference to the learning experiences of nurses</p> <p>M: Collective and individual interviews, surveys</p>	<ul style="list-style-type: none"> • Among the lower grade nurses, a perceived lack of control over practice, lack of involvement in decision-making and lack of recognition for work done 	<ul style="list-style-type: none"> • Facilitators focus on: classroom-based learning • Directorates value: work seminars, adaptation or consolidation programmes 	<ul style="list-style-type: none"> • Insufficient organisational support for continuous professional development, difficulty in counterbalancing organisational aspects such as hierarchy. • Lack of longer term training
Priest N. “Motor Magic”: Evaluation of a community capacitybuilding approach to supporting the development of preschool children. <i>Aust Occup Ther J</i> . 2006;53:220–232. Priest N, Waters E. “Motor Magic”: Evaluation of a community capacity-building approach to supporting the development of preschool children (Part 2). <i>Aust Occup</i>	<p>T: Results of a study</p> <p>C: Programme addressing children with motor and sensory difficulties in an Australian kindergarten. Programme based on training and support for staff and involvement of parents.</p> <p>Q: Identify outcomes for children, parents and kindergarten staff, as well as develop hypotheses about how these outcomes occurred and in what contexts</p> <p>M: Collective interviews</p>	<ul style="list-style-type: none"> • Kindergarten staff is motivated to acquire new skills to help children with motor and sensory difficulties, but staff are frustrated at not being able to get children to progress enough. They see that other strategies do not work on these children and would like to suggest more relevant approaches. They sometimes do not feel confident enough to try out new strategies. • Health professionals wish to share their skills with their colleagues and the kindergarten management. 	<ul style="list-style-type: none"> • Increased mutual respect and understanding • Improved staff self-confidence and esteem, motivation and enjoyment in work and thus reduced frustration with these children • Feeling safe and confident to try new skills and being valued for them. • Increased staff understanding of activity rationale and greater acceptance and use of therapeutic activities • Increased understanding of how a child’s life situation and experiences impact participation at kindergarten Increased staff awareness about how to support 	<ul style="list-style-type: none"> • Improved early identification and early intervention for children with, or at risk of, developmental difficulties • Improved practice of kindergarten staff with both targeted and all children • Improved empathy with, and support for, parents • Increased interagency links and ongoing advocacy for further resources

Reference	Description	Contexts	Results Mechanisms	Outcomes
<i>Ther J.</i> 2007; 54 :140–148. ^a			<p>children with specific needs (while realising parents are doing their best) and about their ability to refer parents to other services</p> <ul style="list-style-type: none"> • Staff feeling supported and able to access reassurance and ideas as new issues arise on an ongoing basis • Manager involved in support for the programme 	
Steven A, Dickinson C, Pearson P. Practice-based interprofessionnal education: looking into the black box. <i>J Interprof Care.</i> 2007; 21 :251–264.	<p>T: Results of a study</p> <p>C: Interprofessional education programme (IPE) for prequalification nurses: <i>The Common Learning Programme in the North East (UK)</i></p> <p>Q: Look into “the black box” of practice-based IPE</p> <p>M: Individual interviews and observations</p>	<ul style="list-style-type: none"> • Student nurses on practice placements in different settings attended seminar sessions • Sometimes placement tutors attended these seminars • Some seminars involved people with experience or researchers considered as experts • Seminar sessions generally facilitated by two academics with backgrounds in health and social care 	<ul style="list-style-type: none"> • Sharing experience through discussion, descriptions, explorations and comparisons interplaying with participants’ emotions (empathy, sympathy, uneasiness...), skills (x-raying, note-taking, general clinical skills...), knowledge (anatomy, psychology, pharmacology, treatment plans...) and experiences (personal and of other people, injuries and treatments). 	<ul style="list-style-type: none"> • Topics planned included professional roles, stereotypes and teamwork. Other topics arose spontaneously during the seminar from issues encountered by students on placement and from subtle interplay among participants.
Tolson D, McIntosh J, Loftus L, Cormie P. Developing a managed clinical network in palliative care: a realistic evaluation. <i>Int J Nurs Stud.</i> 2007; 44 :183–195. ^b	<p>T: Results of a study</p> <p>C: A managed clinical network for implementing a guideline on pain management for patients with cancer in Scotland</p> <p>Q: Reflect on the merits and challenges of realist evaluation applied to this type of programme.</p> <p>M: Individual interviews</p>	<ul style="list-style-type: none"> • Critical mass of knowledgeable practitioners 	<ul style="list-style-type: none"> • Outreach education & pain management teaching/learning resources • Discussion of hypothetical cases • Communication systems with palliative care specialists • Protected time for practitioner learning • Critical feedback using simple audit standards • Tutorials on confidentiality 	<ul style="list-style-type: none"> • Primary care practitioners with greater knowledge and confidence • Reduced perception of threat • Change in professional practice • Growth in practitioner confidence • Practitioners deploying expert knowledge

Reference	Description	Contexts	Results Mechanisms	Outcomes
Rush B. Mental health service user involvement in nurse education: a catalyst for transformative learning. <i>J Ment Health</i> . 2008;17:531–542.	<p>T: Results of a study</p> <p>C: Involvement of health service users in psychiatry nurse education in the UK</p> <p>O: Investigate the impact on student nurses' practice and the underpinning mechanisms and contexts</p> <p>M: Collective and individual interviews</p>	<ul style="list-style-type: none"> Classroom environment more relaxing and conducive to concentrating on learning, compared to placements which are seen as places of work 	<p><u>'Transformative' learning process:</u></p> <ul style="list-style-type: none"> Users share their lived experience with students Students emotionally moved by the users' stories The roles of service user and student are reversed in the classroom (unlike on student placements) Dialogue with peers Service users are prepared and supported in their role towards the student nurses 	<ul style="list-style-type: none"> Students' attitudes and assumptions about people with mental health problems are changed Students are reminded how patients would like to be treated Specific actions taken in practice New knowledge in this area
Wilson VJ, McCormack B, Ives G. Understanding the workplace culture of a special care nursery. <i>J Adv Nurs</i> . 2005;50:27–38.	<p>T: Results of a study</p> <p>C: Emancipatory practice development strategies to increase effectiveness in patient-centred care through the enablement of healthcare teams to transform the culture and context of care in an Australian hospital. Implementation of a voluntary action-learning set in a special care nursery</p> <p>O: Research on the process of learning that takes place, and the impact that this holds for individuals, groups or organisations</p> <p>M: Audio tapes of all action-learning meetings, individual and collective interviews</p>	<ul style="list-style-type: none"> Special care nursery – 30 nursing staff, most were both nurses and midwives. All were female and had some neonatal experience. <p><u>In the volunteer group for action-learning:</u></p> <ul style="list-style-type: none"> Mutual respect Challenging and supportive working relationship Action-learning forms part of a broader programme for developing practice strategies 	<ul style="list-style-type: none"> Learning process based on action-learning: Consciousness raising Empowerment Emancipation (mutual respect and support within the group engaging in their transformative process) Taking initiative 	<ul style="list-style-type: none"> Discussion with rest of staff and practice development initiatives on patient and family environment, pain management during invasive procedures, effective nursing handover, breast-feeding protocol, relationship with parents, parent rooming in, communication, role definition and conflict management.
	T: Literature review	<i>Continuing education</i>		

Reference	Description	Contexts	Results Mechanisms	Outcomes
Dieleman M, Gerretsen B, Van Der Wilt GJ. Human resource management interventions to improve health workers' performance in low and middle income countries: a realist review. <i>Health Res Policy Syst.</i> 2009;7:7.	<p>C: Human resource management (HRM) for improving health workers' performance in developing countries</p> <p>Q: Explore if realist review of published primary research provides better insight into the functioning of HRM interventions in developing countries</p> <p>M: Realist review</p>	<ul style="list-style-type: none"> • Training associated with supervision • Weak management and organisational problems in facilities • High staff turnover • Abolition of user fees • The need to influence the context was reported in several studies, either by strengthening health systems or by developing community interventions <p><u>Important aspects of the interventions:</u></p> <ul style="list-style-type: none"> • Participatory approach based on local problems, resources and stakeholders • Practicing tasks under supervision or offering the possibility of discussing field experience after training • Training for trainers 	<ul style="list-style-type: none"> • Higher levels of skills and knowledge • Critical awareness on functioning of health services • Being empowered to implement change 	<ul style="list-style-type: none"> • Improved knowledge, skills and performance of certain tasks in the short term • Outcome varied considerably between studies and within studies
		<p><i>Supervision</i></p>	<ul style="list-style-type: none"> • Drug supplies <p><u>Important aspects of the interventions:</u></p> <ul style="list-style-type: none"> • Involvement of the community • Participatory approach 	<ul style="list-style-type: none"> • Higher levels of skills and knowledge • Staff have a greater sense of belonging • Mutual respect between supervisors and health workers <ul style="list-style-type: none"> • Greater adherence to various aspects of stock management protocols and standard treatment guidelines
Ogrinc G, Batalden P. Realist evaluation	<p>T: Results of a study</p>	<ul style="list-style-type: none"> • Four teams on call every fourth night 	<ul style="list-style-type: none"> • Less teaching of medical facts 	<ul style="list-style-type: none"> • Decreased learner satisfaction

Reference	Description	Contexts	Results Mechanisms	Outcomes
as a framework for the assessment of teaching about the improvement of care. <i>J Nurs Educ.</i> 2009;48:661–668.	C: Educational sessions for resident physicians and medical students to teach them improvement of care in an academic medical centre in the USA. Q: Describe the qualities of the realist evaluation, the basic components and steps, and provide an example of the realist evaluation M: Observation and theoretical work (presenting hypothetical contexts)	<ul style="list-style-type: none"> • Expectation by the learners to get the facts • White board normally used for individual patients to-do list • 80-hour work week 	<ul style="list-style-type: none"> • Use of white board to monitor progress of improvement (improving rate of influenza vaccines for patients on the ward) • Learners leave hospital at 1pm after on-call night 	<ul style="list-style-type: none"> • Daily conversations about the improvement project • Missed action items for other patients • Attending has more patient interactions
Kane SS, Gerretsen B, Scherpbier R, Dal Poz M, Dieleman M. A realist synthesis of randomised control trials involving use of community health workers for delivering child health interventions in low and middle income countries. <i>BMC Health Serv Res.</i> 2010;10:286. ^d	T: Literature review C: Child (0 to 60 months) health interventions in developing countries involving use of community health workers Q: Explore if RCTs could yield insight into the working of the interventions M: Realist synthesis	<ul style="list-style-type: none"> • Poor communities with unmet needs • Interventions embedded in or closely linked to local public health care services 	<ul style="list-style-type: none"> • Sense of self efficacy and enactive mastery of the tasks • Increased self esteem • Assurance that there is a system for back-up support 	<ul style="list-style-type: none"> • Interventions worked and had a positive effect on the CHW's performance. (N.B. RCTs tend to report the consequences of CHW performance rather than the performance itself)
Patsios D, Carpenter J. The organisation of interagency training to safeguard children in England: a case study using realistic evaluation. <i>Int J Integr Care.</i> 2010;10:e61.	T: Results of a study C: Interagency training in the field of child protection in the UK Q: Develop an evidence base for interagency training to safeguard children. Investigate how the agency partners in Local Safeguarding Children Boards carried out their statutory	<ul style="list-style-type: none"> • Compulsory training • Previous joint working 	<ul style="list-style-type: none"> • Shared commitment to goals and objectives • Interdependence of outcomes • Role clarity • Cultural congruity • Focus on quality and innovation • True cooperation • Interprofessional trust and respect 	<ul style="list-style-type: none"> • Outputs for each site measured in terms of the numbers and types of courses delivered over 1 year. • Categorised in terms of number and type of need of the target audiences. • Financial contributions by each partner

Reference	Description	Contexts	Results Mechanisms	Outcomes
	responsibilities to organise interagency training. M: Analysis of documents, observation of meetings and individual interviews			
O'Campo P, Kirst M, Tsamis C, Chambers C, Ahmad F. Implementing successful intimate partner violence screening programs in health care settings: evidence generated from a realist-informed systematic review. <i>Soc Sci Med.</i> 2011;72:855–866.	T: Literature review C: Intimate partner violence (IPV) screening programmes in a health care setting in Canada Q: Determine how and why IPV screening programmes in health care settings are effective. M: Realist synthesis	<u>Programme components successful in activating the mechanisms:</u> <ul style="list-style-type: none"> • Institutional support • Initial and ongoing training for health professionals • Effective and valid IPV screening protocols • Immediate referral or access to support services 	<ul style="list-style-type: none"> • Sense of self-efficacy and self-confidence among practitioners 	<ul style="list-style-type: none"> • Positive effects on victim screening
Ranmuthugala G, Cunningham FC, Plumb JJ, et al. A realist evaluation of the role of communities of practice in changing healthcare practice. <i>Implement Sci.</i> 2011;6:49.	T: Study protocol C: Introduction of communities of practice as a means of improving practice and patient care in Australia Q: Explore the following issues: What outcomes do communities of practice achieve? Do these outcomes translate into improved practice in healthcare? What are the contexts and mechanisms by which communities of practice impact on improved practice in healthcare? M: Literature review (methods envisaged for testing hypothetical configurations: online survey and	<ul style="list-style-type: none"> • Common goal or purpose • Commitment to improving medical practices • Membership of one or several organisations • Individuals may or may not be located in the one geographical location • Varying levels of seniority and expertise 	<u>Enabling mechanisms:</u> <ul style="list-style-type: none"> • Creating social capital • Access to virtual networks, facilitating access to expertise not available locally • Fosters trust and respect through frequent interactions • Opportunity to discuss work-related problems in a non-judgemental environment • Facilitates multi-disciplinary relationships with other professionals • Facilitates access to experienced clinicians • Facilitates access to experts 	<u>Individual level:</u> <ul style="list-style-type: none"> • Adopted evidence-based guidelines • Introduced a new method or approach in work practice • Developed a new method or approach to solve a work-related problem • Delivered outcome for reduced time <u>Organisational level:</u> <ul style="list-style-type: none"> • Successfully implemented evidence-based guidelines into practice

Reference	Description	Contexts	Results Mechanisms	Outcomes
	four studies on communities of practice)		<ul style="list-style-type: none"> • Facilitates knowledge exchange between members • Provides professional training opportunities • Alleviates sense of professional isolation • Endorsement and support for the community of practice from the organisation • Supportive sponsoring agent <p><u>Disabling mechanisms:</u></p> <ul style="list-style-type: none"> • Lack of infrastructure to facilitate regular meetings • Lack of opportunity to meet face-to-face and establish connections • Lack of clear focus among group members on specific goal • Hierarchical governance structure 	<ul style="list-style-type: none"> • Developed a new system or approach to improve services • Improved clinical outcomes • Improved patient/client satisfaction • Employee retention • Decreased time to problem solving

Notes:

T: type of article; **C**: context of the work presented; **O**: objectives of the research; **M**: methods

^a: Only the contexts, mechanisms and outcomes relating to kindergarten staff practices are presented here.

^b: Only the contexts, mechanisms and outcomes relating to practitioner training are presented here.

^c: Only the contexts, mechanisms and outcomes relating to the training and supervision of healthcare professionals are presented here.

^d: Only the contexts, mechanisms and outcomes relating to the training of Community Health Workers are presented here.

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Abbreviations

WHO: World Health Organization

OECD: Organization for Economic Cooperation and Development

CMO configuration: Context-Mechanism-Outcome configuration



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