From DEPARTMENT OF LEARNING, INFORMATICS, MANAGEMENT AND ETHICS
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MAKE IT HAPPEN AND MAKE IT MATTER - IMPLEMENTATION AND IMPACT OF PRIMARY HEALTHCARE-ACADEMIA PARTNERSHIPS

Håkan Uvhagen

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Make it happen and make it matter - Implementation and impact of primary healthcare-academia partnerships

THESIS FOR DOCTORAL DEGREE (Ph.D.)

By

Håkan Uvhagen

Principal Supervisor:
PhD Mia von Knorring
Karolinska Institutet
Department of Learning, Informatics,
Management and Ethics
Medical Management Centre

Co-supervisors:
PhD Johan Hansson
Public Health Agency of Sweden
Department of Public Health Analysis and Data
Management

Professor Henna Hasson
Karolinska Institutet
Department of Learning, Informatics,
Management and Ethics
Medical Management Centre

Opponent:
Associate Professor Andrea Eriksson
KTH Royal Institute of Technology
School of Technology and Health

Examination Board:
Professor Lotta Dellve
University of Gothenburg
Department of Sociology and Work Science

Associate Professor Christina Björklund
Karolinska Institutet
Institute of Environmental Medicine
Division of Intervention and Implementation
research

Associate Professor Johan Thor
Jönköping University
Department of Jönköping Academy for
Improvement of Health and Welfare

and

Karolinska Institutet
Department of Learning, Informatics,
Management and Ethics
Medical Management Centre

ABSTRACT

Introduction: Most patients' health problems are initially managed within primary healthcare. Increasingly, current reforms in healthcare emphasize the important role of primary healthcare in the healthcare system. Therefore, improvement becomes particularly important in this setting. One improvement strategy that has received increased attention recently is that healthcare professionals and academics should work in closer collaboration. However, few empirical studies report findings on how to implement such collaborations or report on their achievements.

Aim: The aim of this thesis is to increase knowledge about the implementation and impact of healthcare-academia partnership initiatives and why those impacts happen.

Methods: A qualitative research approach was used with an exploratory case study research design. Data was acquired in semi-structured, in-depth, individual interviews with those responsible for the implementation (all managers and coordinators) at eight coordinating centres of an academic primary healthcare initiative. The initiative covers approximately 500 primary healthcare services in central Sweden. Three interview rounds from 2013 to 2017 were conducted. Data was also collected through analysis of policy document.

Findings: The findings show that the implementation of the partnership initiative seemed guided by how the implementation was supported (e.g. committed time, resources, competence, and facilitation), the possibilities to engage in partnerships while delivering ordinary care services, how partnerships and its parts were understood, as well how partnerships respond to practice needs in a timely way. The impact was found as focus on students' clinical training, limited research and network activities, changes in work conditions, students and research as more natural parts of care practice, as well as increased attention to improvement of care quality, mainly at the coordinating centres.

Conclusions: Primary healthcare practice and academia can be regarded as natural partners in developing research and education to improve care practice. However, establishment of such partnerships is not an easy or linear process. In contrast, their creation is characterised by uncertainty not only about where to start, but also about the impact of different courses of action. Partnerships are complex undertakings that need to be carefully managed. If not, promising partnership initiatives may fail, and even contribute to unwanted impacts.

By making partnerships happen and matter in practice, trust and interest in research and education can increase, which, in the long run, will help close the gap between practice and academia and contribute to improve care practice.

LIST OF SCIENTIFIC PAPERS

I.   Uvhagen H, von Knorring M, Hasson H, Øvretveit J, Hansson J. Factors influencing early stage healthcare-academia partnerships. *International Journal of Health Care Quality Assurance* 2018; 31: 28–40.

II. Uvhagen H, Hasson H, Hansson J, von Knorring M. Leading top-down implementation processes: a qualitative study on the role of managers. *BMC Health Services Research* 2018; 18: 562.

III. Uvhagen H, Hasson H, Hansson J, von Knorring M. What happened and why? A programme theory-based qualitative evaluation of a healthcare-academia partnership reform in primary care. *Submitted to BMC Health Services Research* (2019)

CONTENTS

LIST OF ABBREVIATIONS

APHN	Academic Primary Healthcare Network
CLAHRC	Collaborations for Leadership in Applied Health Research and Care
PBRN	Practice-Based Research Network
TEF	Transforming Experience Framework

1 PROLOGUE

Throughout my entire working life, I have been interested in improvements and education that relate to the health of individuals and of communities. I began my academic journey by studying to become a teacher in mathematics and athletics at Stockholm University and at Stockholm University College of Physical Education and Sports. Thereafter I earned a Master's Degree in Public Health at Karolinska Institutet.

Since 2002, I have worked with health and social care organizations as a manager of a local R&D unit in Stockholm County (since 2019, referred to as the Stockholm Region). In that position, I have been privileged to work with the many challenges in the practice-research-education improvement interface. My curiosity about this interface led me to begin my doctoral studies.

As a manager, I regard "improvement" as a core objective in healthcare since quality of care is essential. I share the "unshakeable belief in the idea that everyone in healthcare really has two jobs when they come to work every day: to do their work and to improve it" (Batalden and Davidoff, p. 3 [1]). My professional goal is to examine and evaluate the constant changes in healthcare that can lead to improved patient outcomes, enhanced system performance, and better professional development.

It may be asked: Am I a researcher, a practitioner, or both? In my work with this thesis, I actively took the researcher role – all the while, bearing in mind my professional connection to health care practice. Another answer may be that which of my dual roles prevails depends on context: the people I work with, the setting, and the relevant system. For example, the explorative and critical approach that I take in my role as a doctoral student influences how I think and act in my managerial role.

The funding for my research was provided by the same organization that I am studying. This is also the organization where I was employed (during my doctoral studies). This dual role – researcher and practitioner – has significantly contributed to my learning during my doctoral studies.

The picture on the front-page of this thesis is an illustration of Auguste Rodin's sculpture "The Thinker". For me, this illustration represents the main findings of my thesis regarding implementation and impact of primary healthcare-academia partnerships. As shown in this thesis, how partnerships between primary healthcare practice and academia are implemented matters a great deal. It is not a straightforward process. We need to think very seriously about the implementation of such partnerships and to consider people's perceptions of them – their purposes, prerequisites, and practices context. The illustration also represent what partnership impact could be about, beyond specific study and direct involvement from researchers and educators, in terms of embedding a reflexive culture and an explorative approach in primary care practice.

2 INTRODUCTION

2.1 BACKGROUND

Healthcare systems face challenges that require improvements at system and practice levels. These challenges include dealing with demographic transitions, changing needs, the rapid pace of scientific discovery, and the ever-increasing pressure to be more efficient and to reduce costs [2–4]. Most patients' health problems are initially managed within primary healthcare. Current healthcare reforms place even greater emphasis on the primary healthcare system [5–8]. Therefore, improvement becomes particularly important in this setting [5, 9, 10]. In addition, primary healthcare struggles with its image as a low status work environment compared with other healthcare areas [11, 12].

The healthcare literature recommends numerous strategies aimed at improving the quality of healthcare [8, 13–15]. One strategy that has received increased attention recently is that healthcare professionals and academics should work in closer collaboration. Specifically, it is thought that such collaborative partnerships can contribute to the design and conduct of healthcare services research, to the clinical training of students, and to the efforts to improve healthcare services [16–19]. However, the literature reveals numerous challenges in identifying evidence of successful partnership initiative implementation [20–22]. Although the research discusses the advantages and disadvantages of healthcare-academia partnerships, in fact, few empirical studies report findings on how to implement such partnerships or report on their achievements. Sometimes partnerships turn out as intended and sometimes they do not. We still do not know why [23–25].

2.1.1 Rationale for the thesis

In this thesis I focus on the implementation and impact of healthcare-academia partnerships in primary healthcare. I take the perspective of the healthcare practice actors who were responsible for the implementation of a partnership initiative called the Academic Primary Healthcare Network (APHN).

The three studies in the thesis build on empirical data collected on three occasions from 2013 to 2017. Study I examines factors that influence the early partnership implementation and intermediate partnership outcomes – two years after the partnership was initiated. In this study, the managerial role was an important influential factor. This made us interested in the role of managers. Thus, in Study II, the focus is on the role of the managers who are responsible for the initiative's implementation. Study III evaluates the impact of the partnership and studies potential reasons for why that impact occurred – five and one-half years after the implementation of the initiative. Figure 1 illustrates the rationale for the thesis.

Domain	Perspective	Target group	Study and study aim
Primary healthcare-academia partnerships	Primary healthcare practice	Actors in primary healthcare practice responsible for implementing a partnership initiative — Managers Coordinators	Study I. To explore factors influencing early implementation and intermediate outcomes of a healthcare-academia partnership in a primary healthcare setting
		Managers	Study II. To analyse how managers interpret and make sense of a large scale top-down implementation initiative and what implications this has for the implementation process
		Managers Coordinators	Study III. To evaluate the impact of a reform launched to increase integration between primary care and academia and to identify potential reasons for why the observed impact occurred in three areas targeted by the reform: research, student education, and continued professional development

Figure 1. Rationale for the thesis

To capture the many dimensions of primary healthcare-academia partnership, this thesis draws upon research from complementary areas, including implementation science and role theory (described in detail in Section 4.2).

2.1.2 Perspectives on collaborations between healthcare and academia

In this section, different perspectives on collaborations between healthcare and academia are described. Collaborations that target research and education are used as examples.

2.1.2.1 Collaboration between research and practice

One target for collaboration between academia and healthcare practice is research. Such collaboration can be viewed from two alternative paradigms. First, what has been referred to as the knowledge transfer paradigm [2], and second, the engagement paradigm [2].

The knowledge transfer paradigm

In the knowledge transfer paradigm, practice and research are regarded as separate activities [2]. In the literature, this is usually referred to as Mode 1 research [26, 27]. Mode 1 research, led by researchers who mainly view healthcare practice as a source of information, can be regarded as the traditional approach used in healthcare [28]. The producers of knowledge (i.e., the researchers) are isolated from the knowledge users (i.e., the practitioners), and knowledge is accomplished less dependent on context [16]. The knowledge transfer paradigm, then, is based on the notion that the use of knowledge is essentially a matter of adequate packaging and its transfer [28]. This paradigm further suggests that people will

actively search for knowledge that is conducted in academic settings, find that knowledge, and use the knowledge in practice.

However, some scholars report that the knowledge transfer paradigm presents an overly simplistic view of a complex process [26, 28]. While research on the knowledge transfer paradigm may be effective in dealing with linear problems, critics claim that these solutions are rather limited as far as solutions to complex health issues [29] where contexts change constantly [2]. It is argued that complex problems are difficult to solve by researchers who are isolated from practice and lack the insight and expertise of those working in healthcare practice [2]. Nevertheless, this criticism does not mean that a direct and linear relationship between research and practice impact never occurs. Research in the knowledge transfer paradigm is suggested to be effective (i.e., directly taken up by practice) when the evidence is mostly uncontested, easy to describe, relevant for care practice, possible to test on a small scale, in alignment with people's values, and where the implementation is sufficiently resourced and encouraged [30].

The engagement paradigm

Compared to the knowledge transfer paradigm, the engagement paradigm considers practice and research as entangled activities that link the creation and use of knowledge more closely to healthcare practice [2]. This paradigm reflects the recent focus in literature on the importance of the interaction between researchers and knowledge users. In this paradigm, knowledge is regarded as created in the context in which it will be used [28]. Thus, academics generate collaborative knowledge by working with other stakeholders on issues that are outlined by those who design and deliver care services. Thus, the engagement paradigm suggests that when healthcare professionals take part in research activities, they are more likely to use the results in ways that have a positive impact on the quality of care delivered [31].

The concept of closer collaboration and interaction between academia and healthcare practice is not exact [18]. There are various overlapping approaches and definitions in the engagement paradigm that is sometimes referred to as engaged scholarship [32], co-production of knowledge [16], Mode 2 research [26, 27], Participatory research [33], Research-Practice Partnerships (R-PPs) [18], and Integrated Knowledge Translation (IKT) [34]. Nevertheless, an essential component in all these approaches concerns how researchers and healthcare practitioners collaboratively work on problems relevant to healthcare practice and jointly generate knowledge [18, 35]. For instance, R-PPs are defined as "an activity where researchers and practitioners work together, with different roles, to use research both to solve practical problems and to contribute to science" (Øvretveit et al., p. 116 [18]). A corresponding definition of IKT is the on-going relationship between researchers and practitioners who engage in mutually beneficial research initiatives that support changes in practice [36].

From the perspective of healthcare, in the area of academic medicine, closer collaboration and interaction between academia and healthcare practice is described as the "capacity of the health care system to think, study, research, discover, evaluate, innovate, teach, learn, and improve" (Clark, p. 101 [37]). Consistent with this view, Brommels [37] states that the primary goal of a partnership between healthcare and academia is to ensure a "continuous reinvention of healthcare".

In this thesis, the term *healthcare-academia partnership* refers to the collaboration between healthcare practice and academia that targets research and education that is conducted following the engagement paradigm.

Modes of co-production of research

A complementary perspective to the knowledge transfer and engagement paradigms is Martin's [32] map of the co-production of research modes. In this perspective, the various degree of practice engagement varies at each step in the research process (i.e., design, evidence gathering, analysis, and dissemination) (see Figure 2). Practitioners can take the role of informants, recipients, endorsers, commissioners, or co-researchers. Martin's map, therefore, emphasizes that the knowledge transfer paradigm and the engagement paradigm present a continuum of shifts rather than two fixed endpoints.

	Design				Evidence gathering		Analysis		Dissemination	
	Initiation	Scoping and specification	Commissioning	Methodology	Literature review	Data gathering	Data analysis	Reporting	Publication	Learning
Informant						X				
Recipient						X				X
Endorser		X				X				X
Commissioner	X	X	X	X		X			X	X
Co-researcher	X	X	X	X	X	X	X	X	X	X

Figure 2. Modes of co-production of research, adopted from Martin [32]

In sum, as the literature points out, collaboration between healthcare and academia can be accomplished in different ways with different degrees of engagement and collaboration. The knowledge transfer paradigm is increasingly challenged by the engagement paradigm and its intentions to early and clearly place researchers and end users together [25]. However, despite the suggested benefits of a more collaborative approach, what works best is likely to vary according to context. Therefore, more studies are needed to evaluate the usability of different collaborative forms [18, 32].

Two examples of healthcare-academia partnership initiatives in primary healthcare

In general, collaborative research, as reported in the literature, has a long tradition in hospital settings [38, 39]. However, while less research has been published on such collaborations at primary healthcare centres [39], two examples of healthcare-academia partnership initiatives in primary healthcare that are frequently described in research are the following: Practice-

Based Research Networks (PBRNs) and Collaborations for Leadership in Applied Health Research and Care (CLAHRCs). Both initiatives follow the engagement paradigm.

PBRN

PBRNs have mainly been established in the United States as a way to develop the knowledge base in primary healthcare and to improve the quality of community primary healthcare [26, 40, 41]. PBRNs, which operate differently depending on their context, experience, and resources, are likely to have diverse objectives and configurations [42]. Yet PBRNs have two general aims: translation of research findings into practice; and using practical work settings as a research context [43, 44]. The networks are often based on collaborations between healthcare professionals and academic institutions in which the professionals gather data and the latter provide the competence and facilities required to design and conduct the research [40]. With the use of PBRNs, clinicians' questions can be linked with rigorous research methods. The research findings from PBRNs are expected to be more relevant to clinical practice, more tailored to local contexts, and more easily integrated into everyday care practice [17, 45, 46].

CLAHRC

The CLAHRC initiative originated in 2008 in Great Britain as a way to provide settings where researchers and healthcare professionals could collaborate. Thirteen CLAHRC collaborations have been founded that aim at improving patient outcomes through generating and implementing research findings [47]. In addition to developing and conducting applied health research, the CLAHRCs aim to increase the use of high quality, applied health research that focuses on patients' needs. The rationale for the CLARHC initiative is that closer cooperation between healthcare practitioners and researchers can generate research that is more relevant, enable a culture that is responsive to change, apply research to practice, and improve outcomes of patients [47, 48].

2.1.2.2   Collaboration between education and practice

An additional target for collaboration between academia and healthcare practice is education in which collaborations include undergraduate students in clinical training in healthcare settings [23, 49]. These collaborations generally have the same principal motivation as collaborations between research and practice including more or less engagement and collaboration between healthcare professionals and academic educators.

As in the research conducted in the engagement paradigm, healthcare and education can work collaboratively in the early and subsequent education stages to facilitate each partner's agenda, with a large degree of engagement from both partners [50, 51].

2.2 CHALLENGES TO CONDUCTING RESEARCH ON HEALTHCARE-ACADEMIA PARTNERSHIPS

As explained above, research on partnerships between healthcare and academia has been conducted in different ways, using different approaches. Measuring the academic impact (i.e., the theoretical contribution to a particular field of study) is one approach. Measuring the practical impact (i.e., the applied contribution to a particular area of service) is another, more challenging approach [25]. The complexity of healthcare-academia partnership structures means that measuring their impact requires consideration of the size and design of the healthcare organization, the influence of its local context, and its stage of development [52]. This complexity also means it is necessary to measure both the short-term and the long-term impact of such partnerships, especially in terms of process and outcomes [53–55]. Given this challenging context, it is unsurprising that only a few empirical studies describe how healthcare-academic partnerships have functioned and what they have achieved [18, 19, 24, 56].

In a few available studies of healthcare-academia partnerships, the researchers have taken a theory-based approach to evaluate the success and failure of partnership initiatives. In a study of CLAHRC implementation, Malone et al. [24] used a realistic evaluation approach to identify and track implementation mechanisms and processes, but also to evaluate the intended and unintended consequences of these over time. Hayes et al. [55] used a logic model framework approach to evaluate the progress and impact of a primary care PBRN initiative.

In sum, it appears that researchers struggle to find valid measures that can capture and evaluate the impact of healthcare-academia partnerships. Therefore, more research is needed on partnership evaluation.

2.3 WHAT DO WE KNOW ABOUT SUCCESSFUL IMPLEMENTATION OF HEALTHCARE-ACADEMIA PARTNERSHIPS?

Conditions that influence successful implementation of partnerships between healthcare and academia have been described in previous research. In the following, I summarize the findings from this research according to eight key factors.

1) Mutual understanding and agreement on what is expected to be achieved. This understanding and agreement is achieved by identifying and aligning the partners' motivations and expectations rather than by trying to disguise them, especially when there are different ideas on the collaboration derived from varying experiences and interests [17, 18, 24, 28, 57–60]. Since partnerships are often assumed to evolve over time, continuous clarification and alignment of goals, priorities, visions, and expectations are important [17, 24]. Realistically, however, it is acknowledged that the partners are unlikely to engage in collaborative activities without a clear idea of 'what is in it for me?' [24].

2) Early demonstration of partnership value. The partners may work on different timelines. Practitioners are used to working at a rapid pace while researchers are used to working over extended time periods, sometimes for years in longitudinal research. Thus, it is important that the partnership demonstrates its value in the early stages even if the publication of results is delayed [61].

3) Resources to facilitate collaborations. The literature describes a lengthy, early phase in which collaboration capacity is established that requires resources, beside regular resources for service delivery [20, 24, 28, 34, 62]. In this phase, funding as well as access to methods, tools, expertise, skills, and sufficient time for implementation are all confirmed [28]. Competence is another essential resource. It cannot be assumed that researchers or practitioners have the skills and expertise required of natural collaborators [24].

4) Respectful and trusting long-term relationships. Successful collaborations has been found to depend on the quality of partner relationships [24]. This means it is necessary to establish respectful and trusting, long-term relationships [23, 61, 63, 64]. Collaborations are more likely to succeed when there is a history of relationships in the collaboration [24]. Hence, established partnerships seems to have a better chance of success than newly formed partnerships.

5) Constant evaluation, local adaptation, and learning. To be viable, partnerships must be flexible as they evaluate their progress, adapt to evolving local conditions, and engage in on-going learning activities [65]. Viewing partnerships as non-linear and unpredictable processes is described as an advantage. This approach requires working with, instead of trying to simplify or control, the complexity of partnership initiatives [17, 24, 66].

6) *Supportive and engaged managers.* Another key factor of successful partnerships is the managerial role. The manager commits resources to partnership engagement [19] and facilitates a scientific culture in care practice that values and supports research and education [40, 67–69]. However, although the importance of leadership in healthcare-academia partnerships has been acknowledged, the processes by which managers influence partnership implementation and impact are still largely unexplored [28, 60, 62, 66, 70–72].

7) A collaborative partnership approach. To choose a collaborative partnership approach is suggested to facilitate partnership implementation and improved healthcare performance [16, 73]. By drawing those who produce research and those who use it together earlier and more powerfully than in traditional research translation models, the assumption is that asking more relevant research questions drive and build knowledge that is more readily transferable, more relevant, and able to use for healthcare professionals and their patients [28, 31, 45, 46]. The collaborative approach, then, means that researchers and healthcare practitioners take complementary roles and make complementary contributions throughout the collaborative research process [18, 56].

8) Intermediary bridging, brokering, and boundary spanning roles. A facilitating role helps practice change and links practitioners with the knowledge, experience, and organizational competence needed to incorporate research into practice [24, 62, 74, 75]. Unlike the researcher role, the intermediary bridging and brokering roles are embedded in a healthcare setting rather than in an academic setting [76]. The creation of boundary spanning roles is likely the most visible investment in partnership implementation. Convincing individuals in these roles can have a direct partnership impact [24].

2.4   DO HEALTHCARE-ACADEMIA PARTNERSHIPS MAKE A DIFFERENCE?

As the literature reveals, healthcare-academia partnerships are complex undertakings. Their large variabilities make evaluations of their impact difficult [64, 77]. Various commentary and overview papers on partnerships that theorize or propose intended impact have been published [24, 70], but few empirical studies describe the actual impact [18, 19, 24, 56], especially from the healthcare practice perspective [19]. Nevertheless, the participation of healthcare organizations and practitioners in research and education has been shown to influence patients' health, healthcare practices, and the healthcare practitioners themselves [2, 16, 28, 73]. A majority of this research, however, describes the impact on healthcare service delivery and on healthcare professionals' working conditions; a minority of this research describes the effect on patients' health [73].

The participation of healthcare organizations in research and education does not seem to harm patients. In a systematic review of the impact on patients' health when their healthcare organizations participated in clinical trials, Clarke and Loudon [78] found no clear evidence that patients treated by healthcare services that participated in research activities fared worse than patients treated elsewhere. Turkeshi et al. [79], following the same logic, concluded that the presence and participation of students in clinical training in healthcare practice do not seem to negatively affect patients' health.

In a review of the impact of practitioner participation in healthcare research, Hanney et al. [80] concluded that when healthcare professionals and healthcare organizations collaborate in research, the likelihood of a positive impact on healthcare performance increases. Other research shows an increased emphasis on research in healthcare practice [34, 65, 66, 78, 81]. In addition, observed effects of healthcare-academia partnerships are new clinical services for patients [82], a greater likelihood of guideline compliance [78, 82], and more effective teamwork and communication in healthcare practice [66]. Furthermore, healthcare-academia partnerships have been found to increase the attractiveness of healthcare settings as workplaces, resulting in staff recruitment and retention benefits [83, 84]. In addition, Gonzalo et al. [85] and Teigland et al. [86] found a positive association between healthcare professionals' engagement in education and improvement in work conditions.

Greater job satisfaction among staff members is also described as a result of increased collaboration between researchers and practitioners [28, 62, 84, 87]. This include staff opportunity to expand into complementary roles besides healthcare professional roles [17, 66,

79], greater research interest and literacy in healthcare practice [66], and more appreciation of teaching as a variation from routine healthcare practice [60].

It should be noted, however, that the literature also reports on some disadvantages of healthcare-academia partnerships. Among these disadvantages are the risk of healthcare productivity losses [62, 80, 84] and the possibility of increased workloads for healthcare professionals [62].

In summary, although previous research on implementation and impact from healthcare-academia partnerships, current literature provides an unclear picture. There are a number of assertions about the benefits of healthcare-academia partnership, but few empirical studies offer detailed descriptions of such partnerships from the perspective of healthcare practice [19]. We do not really know what actually happens in such partnerships and why those achievements occur [73]. Therefore, we need to know more about the implementation and impact of healthcare-academia partnerships.

3 AIM

The aim of this thesis is to increase knowledge about the implementation and impact of healthcare-academia partnership initiatives and why those impacts happen.

The thesis addresses the following research questions (numbers in parenthesis refers to Studies I, II, and III):

1. Which factors influence the implementation and intermediate outcomes of a healthcare-academia partnership in a primary healthcare setting? (I, II, III)
2. How do primary healthcare managers interpret the task of implementing a large-scale, top-down implementation initiative? (II)
3. What is the potential impact of a reform that increases the integration between primary healthcare and academia, and why does the observed impacts occur? (I, III)

4 MATERIALS AND METHODS

This section begins with an overview of the three studies in this thesis (see Table 1). Thereafter, the section presents a detailed description of the theoretical perspectives taken in the thesis, the setting for the three studies, and the methods used in each study. The section concludes with the ethical considerations. The numbers in parentheses refer to Studies I, II, and III.

4.1 OVERVIEW OF THE STUDIES

The three studies focus on the introduction of a primary healthcare-academia partnership initiative that was established to increase the integration between primary healthcare and academia in the Stockholm Region in Sweden (see Section 4.3 Setting of the studies).

The studies examine the implementation and impact of the partnership initiative as perceived from a primary healthcare point of view (i.e., by the actors in healthcare practice who were responsible for the implementation of the initiative).

The studies use data acquired in semi-structured, in-depth, individual interviews with managers (I, II, III) and coordinators (I, III), and analysis of the Academic Primary Healthcare Network (APHN) policy document (III).

Table 1. Overview of the materials and methods for the three studies

	Study I	Study II	Study III
Aim	To explore factors influencing early implementation and intermediate outcomes of a healthcare-academia partnership in a primary healthcare setting	To analyse how managers interpret and make sense of a large scale top-down implementation initiative and what implications this has for the implementation process	To evaluate the impact of a reform launched to increase integration between primary care and academia and to identify potential reasons for why the observed impact occurred in three areas targeted by the reform: research, student education, and continued professional development
Data sources	**Interviews** Managers (n=8, conducted late 2013 and early 2014) and coordinators (n=4, conducted late 2013) at the eight APHNs (*total population*)	**Interviews** Managers (n=8, conducted late 2013 – late 2014) at the eight APHNs (interviewed individually twice, in total 16 interviews). (*total population*)	**Interviews** Managers (n=6, conducted mid 2017) and coordinators (n=8, conducted mid 2017) at the eight APHNs. **Documents** APHN policy document from 2011

	Study I	Study II	Study III
Time for data collection	3 months to 2 years after the introduction of the initiative	3 months to 3 years after the introduction of the initiative	3.5 to 5.5 years after the introduction of the initiative
Data analysis	Directed content analysis	Thematic analysis	Logic model framework Document analysis
Theoretical perspective	Determinant framework approach	Role-taking theory approach	Programme theory-based evaluation approach

4.2 THEORETICAL PERSPECTIVES APPLIED IN THIS THESIS

Three different theoretical perspectives inform the research on the healthcare-academia partnership. These perspectives were used to provide guidance on where to look and what to look for in the data [88] in relation to the aims of the three studies. The three perspectives are described next.

4.2.1 A determinant framework approach (I)

Implementation science addresses the evidence to practice gap by its promotion of the systematic uptake of research findings into daily practice intended to improve the quality and effectiveness of healthcare services [89]. According to Nilsen [90], five categories of theoretical approaches are used in implementation science: process models, implementation theories, classic theories, evaluation frameworks, and determinant frameworks. In general, determinant frameworks are used for identifying and illustrating the types of determinants that influence intended implementation outcomes [90]. These frameworks suggest a systems approach to implementation because they address multiple levels of influence and acknowledge relationships between different types of determinants [91]. One such determinant framework is the Model of Strategic Change [92], which is used as a theoretical framework in Study I.

In the Model of Strategic Change, Pettigrew and Whipp [92] use three dimensions to describe strategic change: the content of the change, the change context, and the process of the change. The framework has been used in other studies to structure data according to the three dimensions [93, 94]. However, it is difficult to draw sharp distinctions between the dimensions [95], and users of the Model of Strategic Change seem to interpret the dimensions in slightly different ways [96]. In this thesis, I follow the interpretation of Stetler et al. [94] in which the content of the change relates to motives, the issue studied, and the intended achievement. The change context deals with change conditions (i.e., internal and external environments in which the change process occurs). The process of the change deals with the methods, strategies, or implementation interventions used [94].

The Model of Strategic Change, according to the literature [94], seems based on certain assumptions. For example, one assumption is that change should be seen as a continuous process that is revealed in the on-going interplay among the three dimensions in the model. A second assumption is that change cannot be understood as an isolated event that is separated from the settings in which the change emerges.

Previous research has identified several ways the Model of Strategic Change can address key domains likely to influence change and its outcomes [94, 97]. For example, Stetler et al. [94] found that in healthcare, the model more efficiently explains how factors in the key dimensions interact to create change.

The three dimensions in the model are also found in other determinant frameworks such as the Consolidated Framework For Implementation Research (CFIR) [98] and the Promoting Action on Research in Health Services (PARiHS) framework [99].

In Study I, a determinant framework perspective was used to structure data collection and data analysis and to achieve a more in-depth understanding of the change and the change process.

4.2.2 A role-taking theory approach (II)

The concept of role is one of the most-used concepts in organizational research [102]. A role has traditionally been described in terms of something that is given to the role holder as external demands and expectations of the role [103]. This view suggests that the role holder plays a rather passive part, acknowledging role demands and expectations or not [104, 105]. In this way of understanding the concept, roles are also defined in a rather non-dynamic, static way, which has been criticized for failing to recognize the relationship and dynamics between a role holder and the context in which the role is taken [104–106].

One framework that addresses these challenges is the Transforming Experience Framework (TEF) [104, 107–109] (see Figure 3). According to the TEF, managers' role taking is related to three aspects: the experience of being a person, the experience of being in a system, and the experience of being in a context. 'Person' here refers to how you handle yourself in relation to your own feelings, expectations, and personal desires. 'System' refers to how you perceive and understand the purpose of the organization or the system that you are in. 'Context' refers to how you perceive and handle the available resources (human resources, economic resources, etc.) in the system [104, 107].

This way of understanding managers' role indicates a possible tension between the personal needs and desires of a person and the purpose of the system in which they are to take their professional roles [104]. According to the theory, a role is therefore not something that is passively adopted to, but something that is actively taken. To act as a person "in role" you need to identify the purpose of the system to which you belong, gain ownership of that purpose, and actively choose how to behave and what actions to take to best reach that purpose [109].

In Study II, a role-taking theory perspective was used to identify the unit of analysis and to help us understand how managers perceive their role and how they influence partnerships.
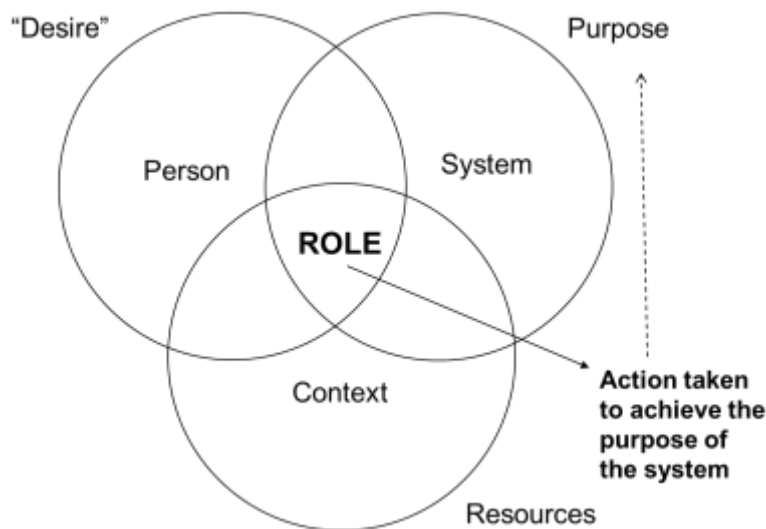

Figure 3. A model of managerial role taking, adopted from Long [106] and Sandahl et al. [105] (published in Uvhagen H, Hasson H, Hansson J, von Knorring M. Leading top-down implementation processes: a qualitative study on the role of managers. *BMC Health Services Research* 2018; 18: 562.)

4.2.3 A programme theory-based evaluation approach (III)

Evaluative studies vary in design, depending on what they aim to achieve [14]. If the focus of a study's evaluation is not only on *what* is achieved but also on *how* and *why* it was or was not successful, a programme theory-based perspective is recommended for the research [108]. In contrast to experimental designs in which the researcher strives to minimise the effect of confounding variables by keeping the context constant, non-experimental designs such as the programme theory-based evaluation perspective are often used when the researcher seeks to include the role of context and its interplay in the research. This is important because contextual factors can either help or hinder the achievement of the intervention's objectives.

The use of a logic model can reveal the underlying theory of a programme. Logic models, which are used in the planning and implementation of various types of programmes, can structure data collection and analysis in an evaluation [57, 109–112]. Preferably, all improvement initiatives should begin with the construction of a logic model [113].

The fundamental aim of a logic model is to present a visual and diagrammatic illustration of a programme in terms of its inputs, activities, outputs, and outcomes. A logic model should reveal the connections or flow between the key elements and how the intervention is expected to produce results [112]. The use of a logic model requires the creation of a series of "if then" relationships that, if implemented as planned, lead to the desired outcomes [64]. However,

there seems to be little agreement on the terminology of logic models [108]. Table 2 illustrates the basic structure of a logic model and the definitions of the elements as used in this thesis.

Some researchers have reported on the benefits from using logic models for evaluation of healthcare-academia partnerships [57, 64, 114]. However, interventions are seldom, if ever, as linear as logic models depict. In Study III, a programme theory-based evaluation perspective was used in the evaluations to inform and structure data collection and analysis.

Table 2. The basic structure of a logic model and definitions of its elements [115]

Inputs	Activities	Outputs	Outcomes
Available resources to achieve the program activities, not there before for this purpose	Activities, not done before, to achieve program outputs and outcomes	Direct products of the program's activities that otherwise would not have happened	Actual benefits – or potential disadvantages – resulting from the program activities and outputs

4.3 SETTING OF THE STUDIES

Public healthcare in Sweden is delivered at national, regional, and local levels. At the regional level, 21 regions (on January 1, 2019, the county councils were renamed as regions) fund and deliver both primary and secondary healthcare services to their residents [116]. The research for the three studies in this thesis was conducted in primary healthcare in the Stockholm Region (the largest region by population in Sweden, with a population of approximately 2.3 million).

Primary healthcare in the Stockholm Region includes primary healthcare centres, rehabilitation, preventive care, child health services, maternal health services, and home care services [117]. In 2013, primary healthcare had approximately 500 units. Of these 500 units, 210 were primary healthcare centres including both public care providers (40%) and private care providers (60%). Primary healthcare in Stockholm is integrated into a publicly tax-financed county health system. It is funded largely on a capitation and fee for service basis [116]. Most primary healthcare physicians are employees. Nurses and other paramedical personnel, who are an integral part of the centres, have significant practice autonomy. Health promotion and disease prevention have been part of primary healthcare for many years, as well as "population responsibility". Primary healthcare is usually the first point of contact with healthcare for most patients in Sweden who eventually transfer to secondary care [118].

As in most other Western countries, Sweden is experiencing an on-going demographic transition that poses challenges to the healthcare system [116]. In the Stockholm Region, a health plan [119] was developed to address the healthcare challenges that result from an aging population and the public's expectation that healthcare should be of higher quality with increased availability. A key aspect of the plan was the transition from the delivery of

healthcare in secondary care settings (i.e., to delivery of healthcare closer to the population). Consequently, more responsibilities were assigned to primary healthcare.

Because patients were supposed to receive healthcare at primary healthcare centres rather than in hospital settings, a parallel discussion took place concerning the integration of research and education in healthcare practice. A public investigation conducted in 2006, which revealed the urgent need for closer collaboration between academia and healthcare, promoted the idea of the "academisation" of the entire healthcare system in the Stockholm Region (instead of mainly at university hospitals) [120]. A main recommendation from this investigation was that research and education should be more closely linked to the patients and (to a greater extent) should be conducted at the primary healthcare centres.

Following this recommendation, the initiative Akademiska Vårdcentraler, referred to in this thesis as the Academic Primary Healthcare Network (APHN), was introduced in 2011.

4.3.1 Academic Primary Healthcare Networks

The APHN initiative was introduced by policy makers in the Stockholm Region. Funding was provided by the local primary healthcare organization but governed in collaboration with the local medical universities. The overall aim of the APHN initiative was to achieve an integration between primary healthcare and academia through more research with close connection to healthcare, improved coordination and structures for clinical training of students, and continued professional development of staff. The main issues to be addressed with the initiative were to improve possibilities to recruit and keep staff, and to improve the quality of care [119, 121]. In addition, the initiative was expected to facilitate the on-going service transfer in the Stockholm Region from emergency hospitals to primary healthcare [119].

In the early stages of the initiative, the Stockholm Region invited the primary healthcare centres in the Region to apply to be coordinating centres for the initiative. Four coordinating centres, which were chosen to coordinate a network of primary care services in a geographic area, were launched in 2011. Four more coordinating centres were launched in 2014. Seven centres were publicly owned corporations; one centre was a private provider.

Each coordinating centre was responsible for coordinating APHNs for approximately 50 to 60 primary healthcare services (mainly, primary healthcare centres – 20-40 centres each – as well as rehabilitation, preventive care, home care services, maternal health services, and child health services). The managers of the coordinating centres were responsible for leading the implementation of the initiative. Throughout the implementation, the eight coordinating centres as well as the network units continued to provide their regular healthcare services.

Part-time coordinators were one of the main resources allocated to the coordinating centres. Each coordinating centre had a part-time coordinator. The coordinators, who were PhDs, were affiliated with a regional medical university and had previous work experience in primary healthcare. According to the policy documents for the APHN, each coordinator's

task was to promote, coordinate, and improve education and research in collaboration with the universities and the primary healthcare services. Clinical lecturers, who were employed in primary healthcare and were affiliated with medical universities in the Stockholm Region, were another resource. Their main tasks were to link healthcare practice to academia and to provide pedagogic support to supervisors of students in primary care. Another input was initial start-up funding that supported, for example, the reconstructions of facilities for students' clinical training.

Table 3 presents a reconstruction of the APHN initiative that illustrates how it was intended to work.

Inputs →	Activities →	Outputs →	Outcomes
Mandate described in a policy document	Establishment of eight coordinating centres	**Students' clinical training** Improved coordination, structures, and learning environments for students' clinical training and improved competencies in clinical training	Improvement of care quality and increased use of evidence-based interventions
Establishment of a steering committee, project group, and a reference group	Extended mandate to the managers of the coordinating centres	More students in clinical training	More positive attitudes towards students and research in primary care
Research and educational competences from academia	Establishment of eight coordinators for the centres	Increased inter-professional training for students	Improved job satisfaction
Funding for coordination and clinical lecturers' resources	Establishment of eight networks	**Continuous professional development** More continuous professional development opportunities and activities	Better chance to recruit and retain staff
Initial start-up funding	Establishment and coordination of clinical lectures	**Research** More research projects with connections to primary care	
		Other Establishment of networks of primary care units	
		Collaboration with actors outside the primary care organization	

Table 3. A reconstruction of the APHN initiative and its intended outputs and outcomes [121]

Although research and education have longer traditions in university hospital settings than in primary healthcare in the Stockholm Region, the APHN initiative did not occur in a vacuum. The Region had long experience with education in primary healthcare. Clinical training for students and participation in the development of clinical training structures were already existing mandatory parts of the healthcare assignment [122]. An example of a partnership initiative (prior to the APHN initiative) was the 2006 creation of Region-wide primary care-based knowledge centres that supported research and education in primary care.

In sum, the APHN initiative focused attention more strongly on the role of research and education in primary healthcare by providing resources and a collaborative structure that promoted a closer working relationship between primary healthcare and academia.

4.4 MAIN RESEARCH STRATEGIES

4.4.1 Study design and data collection

An exploratory case study research design [123] was deemed relevant for exploring 'how', 'what', and 'why' questions, but also applicable as the APHN case was considered difficult to define and control with unclear boundaries towards the healthcare system and its engaged stakeholders [124].

The principal data collection method was semi-structured, in-depth individual interviews. Data were collected in three interview rounds conducted between 2013 and 2017. The respondents consisted of the total population of the actors in primary healthcare practice who had formal responsibility for the implementation of the APHN initiative (managers and coordinators). Study III was an exception because two of the eight coordinating managers did not participate. Four respondents were interviewed in all three interview rounds. In total, 18 respondents participated in the interviews.

The first interview round (IR1) took place during the fourth quarter of 2013 and the first quarter of 2014 (the managers and coordinators who were employed at the centres were interviewed). The analysis of the data was reported in Study I. The second interview round (IR2) (with the same managers as respondents as in IR1) took place in the first and fourth quarters of 2014. The data from IR2 were merged with partial data from IR1 (using only data from the managers) in a new data set that was used in Study II. The third interview round (IR3) took place in the second quarter of 2017 (managers and coordinators currently at the centres were interviewed). The policy document from 2011 that described the APHN initiative was analysed in 2017 and was compared with data from IR1. The analysis of the data was reported in Study III. Table 4 presents the three interview rounds, the time of the data collection, and the data used in the three studies.

	2011	2012	2013	2014		2015	2016	2017
	(Policy documents)		(IR 1)	(IR 1)	(IR 2)			(IR 3)
Study I			✓	✓				
Study II			✓	✓	✓			
Study III	✓		✓	✓				✓

Table 4. The time of the data collection and data used in the three studies (IR = Interview Round)

An invitation to participate in the interviews was sent via e-mail to all potential respondents. The invitation described the research objectives and respondent confidentiality. Audio-recorded informed consent was obtained from all respondents who agreed to participate. The participants were also informed of their right to withdraw from the study at any time. After

completion of the interviews, the respondents were given the opportunity to review their interview transcripts. The interviews were audio-recorded and transcribed verbatim.

4.5 RESPONDENTS, DATA COLLECTION, AND DATA ANALYSIS

This section describes the respondents, data collection, and data analysis in the three studies.

4.5.1 Study I

To explore factors that influenced the early stages of the implementation and the intermediate outcomes of the partnership initiative, semi-structured in-depth interviews were conducted with the eight coordinating primary healthcare centre managers and all coordinators employed at the time of the study. The first four APHNs and the second four APHNs had been in operation for 18 months and 3 months, respectively. Only four coordinators were then employed. The interview guide was based on The Model of Strategic Change [92]. The questions in the interview guide addressed the background for the initiative and the interviewees' perceptions and expectations of, and experiences with, similar initiatives, actions to implement the APHNs, intermediate outcomes, and suggestions for future work.

Directed content analysis [125] was used to analyse the interview data. All interview statements were initially deductively coded according to the dimensions listed in The Model of Strategic Change [92]. All authors of Study I discussed the coding until consensus was reached. Within each core dimension, sub-categories were created, and patterns were identified.

4.5.2 Study II

In Study I, we found that the managers seemed to have an important role in the implementation of partnerships. However, the interview data from Study I was insufficient to make a deeper investigation into that issue. Therefore, additional interviews were conducted in which the eight coordinating primary healthcare centre managers were asked more specific questions about their role in the implementation. We added data with information about the managerial role from IR1 to the data from IR 2, resulting in a new unit of analysis. In this way, the eight managers at the coordinating centres were interviewed twice. Sixteen interviews were conducted.

To identify and report patterns, a thematic approach [126] was used to analyse data. Initial familiarization with the data set was attained by reading and re-reading the transcribed interviews several times. Thereafter, all statements related to the managerial role were identified, strictly guided by the main aspects of a role-taking model [106]. Using this procedure, we extracted all statements that were in any way related to issues of person, context, system, or purpose (as conceptualized in the TEF model). In the next step, all statements that were identified were coded, and preliminary themes in the data were identified. A thematic map that related the identified themes to each other was created and refined using an iterative procedure going "back and forth" between empirical data and preliminary themes in the thematic map. Refinements and specifications of the themes were

finalised based on in-depth discussions and negotiated consensus [127] among all authors of Study II. Relationships between the themes were developed.

4.5.3 Study III

Study III used a programme theory-based approach to evaluation [108], taking a logic model approach. Based on document analysis [128] of data from the APHN policy document, a preliminary logic model was constructed [115] (see Table 3). The preliminary logic model illustrated how the initiative was expected to work by displaying a flow chart with the expected steps from initiative inputs to activities to intended outputs and outcomes [115]. Next, the constructed theory of the programme (i.e., the initiative) was validated by comparisons to statements from previous interviews in IR1 (from 2013 and 2014 with the eight managers and the four coordinators) regarding the initiative's intentions and expected outputs and outcomes.

Additional interview data were then collected to study how the expected impact of the initiative was realized in practice. The preliminary logic model was used to develop an interview guide that aimed to understand how the respondents perceived the outputs and outcomes of the initiative and what they considered contributed to these results. Interviews were conducted with six of the eight managers and the eight coordinators at the coordinating centres in May and June of 2017. These respondents had participated in the APHN initiative for various periods of time – from approximately six months to 66 months.

In the first step of the interview data analysis, the data on how the respondents perceived the outputs and outcomes of the initiative were identified using a thematic analysis approach [126], framed within the logic model. The data were then compared to the expected impact as described by the preliminary logic model [129]. Next, data that reflected the respondents' views about what they thought contributed to the impact were coded and categorized thematically [126]. This stage of the analysis concerned the respondents' descriptions of the initiative impact and the specific linkages between the elements in the logic model.

4.6 ETHICAL CONSIDERATIONS

The participation of the respondents was voluntary. Prior to the interviews, the respondents were informed of their right to withdraw from the research at any time and were guaranteed anonymity. They were also informed of the research purpose and funding source. Moreover, all respondents were invited to review a transcript of their interviews so that they could make corrections and additions.

The Regional Ethical Review Board in Stockholm (2013/434-31/5; 2017/664-32) approved this research.

5 FINDINGS

In this section findings from the three studies are presented. Thereafter, the identified overarching impact of the APHNs is summarized followed by a presentation of the identified reasons for this impact.

5.1 STUDY I

In Study 1, using the Model of Strategic Change [92], we explored general dimensions and specific factors that appeared to influence early implementation and intermediate outcomes of the healthcare-academia partnerships in primary healthcare (approximately three to 18 months after initiation of the partnerships).

The analysis showed that interacting factors related to content, context, and process, in various ways, both helped and hindered the implementation of the APHNs. The main findings are summarized below, broadly categorized by each dimension in the Model of Strategic Change [92].

Content

One content factor was the perceived relevance of the APHN assignment, described as promoting the implementation. The relevance of the assignment was also reported to increase motivation among healthcare staff to move the implementation forward and more quickly get the networks active.

A lack of resources related to the objectives was viewed as hindering. This caused an unintended prioritization between the APHN assignment and the regular primary healthcare assignment. The concern was that this might endanger patients' safety, harm the work environment, and decrease the stakeholders' motivation.

The analysis showed that the APHN plan provided limited guidance on specific implementation activities. The underspecified guidelines allowed flexibility in how the initiative was implemented. Thus, the plan provided a chance to apply new ways of working, which, in turn, increased motivation and involvement of staff. However, some respondents argued that the partial guidance generated inactivity, which challenged further implementation activities.

Context

That implementation was aided when the managers of the coordinating primary healthcare centre showed interest in the plan and encouraged the staff to work differently. By showing support and addressing practical conditions in the implementation of the APHN assignment, the managers demonstrated their conviction that the initiative should be prioritised as an important part of primary healthcare practice. This in turn inspired the healthcare staff to take an active part in the implementation process.

Facilities that were fit-for-purpose (i.e., to integrate research and education in healthcare practice) were another contextual factor that advanced the implementation. To avoid a separation between the APHN activities and healthcare practice, physical integration was considered as essential for achieving the overall objectives.

Prior positive experiences from similar initiatives were reported as significant in the implementation. These experiences contributed to a culture that encouraged change. However, less positive prior experiences were considered as a hindering factor that is manifested in inadequate infrastructures and low cultural preparedness.

In addition, conflicting reimbursement systems were described as hindering the implementation of APHN. The managers of the coordinating primary healthcare centres had to work hard to simultaneously address the APHN assignment and the regular healthcare assignment. This was regarded as challenging as far as the productivity of healthcare, especially in contrast to primary healthcare centres without the added APHN assignment.

Process

Limited planning for the implementation of the APHNs seemed to hinder the implementation. The decisions regarding which actions to take in the implementation seemed based on practical implementation experiences. Few examples were given when asked about their plans to implement APHN. The examples that were described rarely addressed implementation actions or implementation models found in the literature.

The analysis showed that organizational separation between regular healthcare practice and the APHN initiative also influenced the APNH implementation. Distinctions were drawn between staff who performed everyday healthcare duties and staff employed in the APHN. This division threatened to increase the separation of assignments among staff.

Intermediate outcomes

Even though the APHN assignment had three different aims (i.e., stimulating research; promoting and coordinating clinical training for students; and promoting professional development), the focus on clinical training for students was clearly recognised as an early intermediate outcome in the APHN implementation. A systematic dialogue and ongoing asking for feedback from students concerning their experiences of their clinical training was emphasized as an approach to improve and sustain high-quality clinical training and healthcare practice.

Another intermediate outcome was the focus on internal communication and the involvement of primary healthcare staff to facilitate a common understanding of the APHN initiative and to be a part of the implementation process. External communication regarding the APHN assignment, initiation of the networks, and actions to strengthen the interface with academia were other reported intermediate outcomes.

In addition, early implementation actions were taken to physically integrate the APHNs into care practice. These changes were made to increase the number of students, to encourage inter-professional education, and to establish seminars, educational sessions, and practices that were led by students.

5.2 STUDY II

Study II focused on how the managers interpreted the large-scale, top-down APHN initiative and its implications for the implementation process.

The analysis showed that although the primary healthcare managers in this study received similar implementation assignments and they gave comprehensible descriptions of why the APHN initiative was important, they interpreted the implementation task in different ways. It seemed as their efforts to integrate education and research in healthcare practice built on the combination of three important factors.

Three factors that influenced how the managers interpreted the implementation task

The managers' perception of the different parts of the initiative and their interrelationship

The first factor that influenced how the managers interpreted the implementation task related to their perceptions of the different initiative parts (i.e., academia and primary healthcare) and the relationship between the parts. They perceived the initiative in two ways.

One way of describing the various parts of the initiative and the relationship between them was as a cohesive, close relationship between the different initiative parts. In this description, the parts were described as "integrated in the whole" that to a large extent was already "inclusive in their work". Another way of describing the relationship between the initiative parts was to emphasize their differences. The initiative parts were understood as inconsistent and entail tasks that need to be weighed against each other.

The managers' self-perception in relation to the different parts of the initiative

The second factor that influenced how the managers interpreted the implementation task related to their perceptions of themselves in relation to the different initiative parts.

The managers used two significantly different approaches to place themselves as managers in relation to the variou initiative parts depending on whether or not they viewed themselves as academics. One aspect was to consider having a PhD as important, emphasizing having knowledge of "the academic lingo" and being comfortable with academic settings. It was pointed out that many mangers "don't have that background", making the implementation task "very difficult". Another aspect of having a PhD related to the risk of being "too academic" and "too distant from healthcare reality" in the managerial role to facilitate the integration of academia and practice.

The managers' perception of available resources for implementation of the initiative

The third factor that influenced how the managers interpreted the implementation task associated to how they perceived the available resources for implementation of the initiative.

Perceptions of performing two different tasks at the same time were found. Difficulties in "producing healthcare" and "finding the time to facilitate clinical training" gave descriptions of the implementation as a "mismatch".

Implications for the implementation process

These three factors had implications for how the managers addressed the implementation process. Two various approaches were identified: an integrating approach and a separating approach.

The integrating approach was applied by the managers when the parts of the implementation were perceived as unified, and when available implementation resources were considered to facilitate, or at least not hamper, the integration. The separating approach was applied when the initiative parts were perceived as inconsistent and/or when available initiative resources were considered to hamper an integrated implementation.

5.3   STUDY III

Study III evaluated the impact of the APHN reform and the potential reasons for why this impact occurred approximately 36 to 66 months after initiation of the partnerships.

Impact of the APHN reform

The analysis showed that the APHN reform had some impact on the three areas initially addressed in the reform (i.e., students' clinical training, research, and on-going professional development). However, most changes took place in the area of student clinical training and principally at the coordinating centres, influenced by their existing centre profiles.

An intended reform output was to improve the structure and coordination of students' clinical training and to strengthen the primary healthcare staff competencies for providing such clinical training. The analysis showed that these outputs were achieved. Improvements in clinical training structures and pedagogic competencies were reported. These improvements helped clarify the staff's roles in student training. The analysis also identified improvements in the students learning environments and in the attempts to increase their inter-professional training.

Considering the impact of students, the respondents described that integration of educational activities and improved structures and coordination of clinical training represented a more systematic addition to advances in practice quality. Furthermore, changes in attitude and understanding students and research as more interesting with greater relevancy for practice, and a more natural and prioritised part of primary healthcare practice were another outcome of the reform.

28

The reform was also expected to link research more closely with primary healthcare. This output was achieved to some extent when different approaches to research were taken. These approaches ranged between early involvements of healthcare staff in the research process to staff functioning more extensively as data providers for external researchers. These activities, however, seemed difficult to implement and maintain. Compared to educational efforts, they were relatively few and in early stages.

Even though the intent of the reform was to form networks of care units that would disseminate and enable the learning and research potential of the reform, these networks were only partially put into practice

An unexpected output regarded that the coordinating centres enhanced their local profiles based on previous and local interests and strengths. This impact seemed linked to what was already well known at the centres.

An unexpected outcome of the reform was the increase in the staff workload. However, the staff's participation in education and research, combined with a clearer student supervisor roles, increased job satisfaction. Development of staff, increased confidence in research and clinical training participation, and increased variation in work tasks were reported to add to an attractive workplace and to improvements in staff recruitment and retention.

Overall, the analysis showed that the reform, although still in its early stages, resulted in closer partner dialogues and an increased focus on efforts regarding quality improvement building on evidence-based interventions and scientific knowledge.

Reasons for primarily focusing on education

The primary focus on education could be explained by the fact the staff at the primary healthcare centres were most familiar with that area. Since education was intuitively comprehensive, enhancement in this area required less resources to be achieved. In addition, education was also considered to involve the burning issues of staff recruitment and retention. Thus, it was simply easier and more important to focus on education than on research.

Reasons for having limited research

Compared to education, research was reported as "something new" and thus anticipated to be resource-intensive and consuming time with limited return on investments for the primary healthcare centres and their users (i.e., the advantages for healthcare services were unclear). In addition, the respondents described absence of time for practitioners to participate and engage in research at the same time they provided patient care without risking the safety of patients, availability to healthcare, and working conditions. In combination with limited APHN coordinator resources, research activities were difficult to conduct.

Some research was conducted, though on a limited scale. The use of co-creative research approaches that took the perspectives of practice (i.e., practical requirements and problems) were specifically described as leading to research perceived as relevant for practice.

Reasons for specification of the local profiles of the centres

The findings suggest that the coordinators and managers found the reform unspecific with little guidance on how and what to achieve. Nevertheless, this lack of specificity provided the centres the autonomy and flexibility to the reform content to their local contexts. Thus, the centres could choose their own priorities as far as the reform's goals and activities. However, as the centres developed their local profiles, it became increasingly difficult to settle on mutual efforts and to establish close collaborations among the centres. In part, these limitations were allowed because it was perceived that there was no overall steering towards a common goal.

Reasons for local rather than system level changes

The analysis showed that one reason for changes on local levels rather than system level changes was the lack of a critical mass of people with experience from academia at each centre. It was difficult to realize the idea that a single individual (i.e., a coordinator working part time) could make and oversee changes for as many as 60 primary healthcare services. Another reason was that care units in the networks lacked incentives to collaborate in the APHNs. The APHN assignment was set to the coordinating centres, but no incentive on a system level was reported.

The importance of facilitating roles to achieve impact

The formation of the facilitating roles (i.e., the eight centre coordinators and appointed clinical lecturers) was the part that seemed to add most to the overall impact of the initiative. The coordinators, with experience from both academia and healthcare, built relationships with the staff in primary healthcare practice by their close proximity to practice. They were physically "situated in" a centre and were embedded as "part of" primary healthcare.

The respondents indicated that partnership activities would have been impossible in a busy practice without the coordinators. They implied that primary healthcare staff had insufficient time or skills to achieve partnership activities on their own.

5.4 IMPACT OF THE HEALTHCARE-ACADEMIA PARTNERSHIP

Taken together, the three studies in this thesis show that impact of the APHNs– from the perspectives of the managers and coordinators who were responsible for the implementation of the initiative– was found as intermediate outcomes, outputs, and outcomes mainly at the coordinating centres (see Table 5).

Table 5. Impact of the APHN initiative

Intermediate outcomes (I) *	Outputs (III) ***	Outcomes (II)**, (III)***
Definition: Direct products of the initiative's activities that otherwise would not have happened		Definition: Actual benefits – or potential disadvantages – resulting from the initiative activities and outputs
Priority of objectives, main focus on structures for students' clinical training (e.g., training processes and facilities) Initiation of networks (e.g., other primary care units) Internal communications (e.g., on the tasks and involvement of staff) External communications (e.g., for strengthening the interface with academia)	**Students' clinical training**: Improved coordination and structures, improved competencies, more students, and improved learning environments. **Continuous professional development**: More opportunities and activities. **Research**: Research projects with connection to primary care were initiated but difficult to operate in practice. However, some practitioners engaged in the research. **Other**: Networks were established but with few activities; some collaboration was established with actors outside the primary care organization; further specification of the local profiles at the centres was made.	Increased dialogue about improvements in quality of care and the use of evidence-based interventions (although in early stages). More positive attitudes towards students and research in primary care. Increased workload as well as improved job satisfaction and chances to recruit and retain staff.

* approx. 3 to 24 months after initiation of the initiative
** approx. 3 to 36 months after the initiation of the initiative
*** approx. 41 to 66 months after the initiation of the initiative

The focus on students' clinical training

According to the APHN policy documents, the initiative was to address three main areas: promoting and coordinating clinical training for students, increasing and stimulating research in healthcare practice, and improving coordination and structures for continued professional development of staff. Initially, these areas were communicated both internally and externally (I). Study III found an impact in all three areas although education and the creation of opportunities for students' clinical training was an early prioritization (I). The greatest impact occurred in student education, mainly at the coordinating primary healthcare centres (III). The focus on students' clinical training, which improved the coordination and structures for training, strengthened learning environments for students as well as for the primary healthcare staff (I, III).

Limited research and network activities

Studies I and III showed that the APHN initiative had a rather minor impact on the research activities in primary healthcare practice. Extensions of ongoing research were found. This further specified the coordinating centres local profiles and was based on unique strengths and local interests (III). Some new research projects that involved the healthcare staff in the

research process were initiated (III). These activities, however, were difficult to implement, and, in contrast to students' clinical training, were few and in their early stages (I, III).

The initiative was intended to create networks of primary care services that would facilitate and spread the initiative's research and learning potential. The networks were initiated (I), but they were only partially realized in practice (III).

Changes in work conditions

Another impact of the APHN initiative concerned changes in the coordinating primary healthcare centres' work conditions (I, II, III). It was stressful and difficult for staff to deliver primary healthcare at the same time they were expected to engage in education, research, and continues professional development – in the context of a busy care practice with shortages of staff (I, II, III).

Yet the staff's engagement in research and education, combined with their clearer role as supervisor of students, increased job satisfaction (III). Staff was reported to improve their competences, gain confidence from participating in research and clinical training, and appreciate the greater variation in their work. Thus, the centres were regarded to have become a more interesting and attractive workplace with improved staff recruitment and retention (III).

Quality improvement, students, and research as more natural parts of care practice

Through the closer collaboration between primary healthcare and academia, questions regarding quality of care and practice improvement appeared more prominently on the practice agenda (III). In addition, students and research were perceived as more relevant, more interesting, and more prioritized issues for practice. They seemed more natural aspects of primary healthcare practice (I, III).

5.5   THE MAIN REASONS FOR THE PARTNERSHIP IMPACT

Studies I, II, and III present different reasons for the impact of the APHN initiative. This section summarises these reasons.

According to the respondents, the most important reason was the coordinators' facilitating role (I, III). Studies I and III show that the implementation and impact of the initiative would not have occurred at the busy primary care units without coordinator assistance at the coordinating centres. Staff at the centres, on their own, did not seem have the time or skills to implement the initiative in a way that would have achieved the same impact (III). Decisive factors were that the APHN managers supported the coordinators and the managers promoted the implementation (I).

The coordinators were well qualified to coordinate the APHN initiative. They were familiar with both healthcare practice and academia (III), had the time to embed in care practice where they could establish trusting relationships with primary care staff (III), and could take

co-creative partnership approaches that acknowledged practice needs and problems (III). The coordinators' use of these co-creative partnership approaches, based in practice perspectives, resulted in partnership activities that were seen as more relevant to practice.

The coordinating centres initially focused on the area of education (I) where their work, for various reasons, had a more meaningful impact (III). First, their work related to how education in the initiative was perceived. It was easier to comprehend and manage the education activities than the research activities (I, II, III). Second, education required fewer resources than research in its initial phases (I, II, III). Third, education seemed more compatible with healthcare practice (I, II, III). It was more reasonable to combine education and healthcare practice than to combine research and healthcare practice (I, II, III). Fourth, the staff had limited time in which to conduct research; they worried that time spent on research was taken from patient care that could negatively affect healthcare availability, patient safety, and staff working conditions (I, III). Fifth, the managers and the coordinators expected that a focus on education would produce clearer and quicker results than a focus on research (I, II, III).

Three additional reasons explain the particular focus on the students' clinical training. First, the centres had teaching experience in this area. Second, students from various student programmes were already present at the primary care units. Third, the staff was more used to (and more comfortable with) education activities than with research activities (I, II, III).

Because the intent of the APHN initiative was to produce system level results, the eight APHNs intended to establish networks with nearby primary healthcare centres (I). However, this intention was only partly achieved in the period covered by this research (III). The principal explanation for this output was that the part-time coordinators lacked the time to achieve this outcome (I, III). In addition, there were insufficient numbers of persons with academic experience at each coordinating centre (III). Furthermore, the rather vague initiative policies (no incentives were described at the system level) were impediments to the development of system level changes (I, III).

Studies I, II, and III show that the healthcare-academia partnership had a positive impact on the work conditions experienced by the primary healthcare staff. First, staff competence developed (I, III) as research and training skills improved (III). Second, supervisory roles were clarified (III). Third, staff found their work more varied and therefore more interesting (III).

Yet, in some respects, the healthcare-academic partnership had a negative impact on the staff's work conditions. Among the reasons were the increased and more stressful workload (I, II, III), the managerial role conflicts, and the uncomfortable necessity to choose among research, education, and healthcare practice activities. (II, III).

6 DISCUSSION

The aim of this thesis was to increase knowledge about the implementation and impact of healthcare-academia partnership initiatives and why those impacts happen. This was studied in the largest healthcare region in Sweden, at the introduction of a partnership between primary healthcare and academia. The implementation of the partnership initiative seemed guided by how the implementation was supported (e.g. committed time, resources, competence, and facilitation), the possibilities to engage in partnerships while delivering ordinary care services, how partnerships and its parts were understood, as well as how partnerships respond to practice needs in a timely way. The partnership's impact was found as focus on students' clinical training, limited research and network activities, changes in work conditions, students and research as more natural parts of care practice, as well as increased attention to improvement of care quality, mainly at the coordinating centres.

In this section, I discuss these research findings. I conclude with a discussion of methodological considerations.

Impact as strengthening capacity in care practice

The partnership initiative mainly had impact at the coordinating centres and the greatest influence was on student education. The initiative also resulted in an increase in the dialogue on healthcare quality improvements, changes in attitudes towards students and research in primary healthcare, and staff work conditions. These findings partially confirm findings from previous research. For example, Yawn et al. [66], in a study of a practice-based research network, pointed to an increase in the focus on improvements in primary healthcare quality and to an increase in practitioners' interest in research among practitioner as a result of the partnership. Others describe practice impact from partnership participation as a broadened reflection on healthcare professionals own activities [130], increased attention to critical thinking and establishing a research culture [76] as well as enhanced partnership capacity of both researchers and professionals [131]. Further studies have identified increased job satisfaction and increased professional development from involvement in clinical training [60, 79]. The risk that engagement in research and education might be too time consuming and lead to productivity losses and increased pressure on busy healthcare professionals has also been reported as potential partnership outcomes [17, 79].

Based on the findings in this thesis it is possible to distinguish two types of impact. The first type concerns immediate achievements that are already evident in implementation stages (e.g., strengthened training structures, improved learning environments, and more students). The second type concerns changes in behaviours and achievements in practice that extend beyond the specific initiative and direct involvement of from researchers and educators (e.g., increased dialogue about improvement of care quality, changes in attitudes towards students and research in primary care). The second type of impact is consistent

with previous research in terms of building research capacity, promoting a reflexive culture, and strengthening critical thinking [19, 66, 76, 132].

These findings raise questions about the impact of primary healthcare-academia partnerships, in particular about what they actually achieve or should achieve. One interpretation is that closer collaboration between primary healthcare and academia is not only about to integrate research and education in practice, potentially leading to relevant research and improved learning environments, but also, and perhaps more important, to integrate and strengthen core aspects of academia, i.e., a scientific critical thinking and an explorative approach, in care practice.

In this way, engagement in research and education by care practice could be seen as a method to achieve a scientific explorative approach that becomes a matter to all professionals and not only to those who participate in research or education. If healthcare practice embraces this approach it could be a powerful condition for picking up research findings, increasing learning environments, and practice improvement on an overall level, no matter the improvement approach. The same line of reasoning is made by Kislov et al [132]. The authors emphasize the development of more generic and multi-level capabilities to better adapt to change, pick up knowledge and to innovate in care practice. If the focus remains on project-specific capabilities, there is a risk that capabilities that were developed through engagement in the project will stay project specific and will not influence in other areas and on people working in other project [132]. Healthcare systems are environments that change rapidly [3]. Therefore, improved capabilities are always needed [133]. As described by Greenhalgh et al. [134], quality improvement, innovation, and scale-up occur more easily and often in contexts characterised by a scientific and explorative approach and by critical thinking.

This way of thinking about impact from partnerships also addresses how such impact could be measured. Traditionally, partnership impact has been evaluated by the number of successful grant applications, by the number of published scientific papers, and by the corresponding impact factor of the journals [25, 135, 136]. These measurements reflect academic achievements. It is difficult, however, to establish direct links between scientific publications and practice improvements. There is increasing evidence that making evidence available to clinical practice is likely to be of limited effectiveness [137]. Since currently available methods for capturing the influence of partnerships on healthcare practice are underdeveloped [25], more research is needed to develop better measures.

The influence of prior experiences

The findings from this thesis show that the people responsible for the implementation of the partnership initiative prioritized collaboration that targeted educational activities. One explanation is that the coordinating centres had prior experience with educational activities. This confirms previous research on the importance of experience in partnership implementation [24, 65]. One interpretation is that partnership initiatives should be

implemented in settings prepared for such activities. However, from a system perspective, this turns into a dilemma. Such approach strengthens settings that are already strong, when the actual need for capacity development might be larger in settings that have fewer experiences of partnerships and, thus, are less prepared.

Another aspect of prior experiences concerns how the implementation of collaborations targeting research and education is perceived (i.e. how research and education are understood and how those correspond to delivering primary care services). The respondents stated that they were more familiar with students' clinical training than with research activities. The influence of perceptions in implementation is reported by Avby et al. [138]. In their study on innovations in primary care, the authors describe the need to consistently transform and integrate a policy "push" with professionals' understanding of the implementation. Without alignment between policy intentions and professionals' perceptions, implementation and change in practice are not supported [138].

The importance of perceptions agrees with the TEF model [106] in which experience is a key aspect that influence how and what actions that are taken. The powerful influence of perceptions on the implementation process and the subsequent impact on the partnerships both reveal the need for an early and on-going dialogue about how partnerships and their various elements are perceived by people responsible for the implementation. The findings from this thesis indicate that the main influence on the implementation was not the partnership content. Rather, the main influence was the way in which the implementation parts (i.e., research, education and primary healthcare) were perceived. Managers are important in the implementation of partnerships [64, 68, 77, 139, 140], and this thesis put focus on the relevance of considering how the implementation is perceived by the managers.

In the implementation of partnerships, it is possible, and even likely, that academia and healthcare practice have different perceptions of their partnerships, given their potentially different experiences and interests [17, 31]. Nevertheless, the problem is not the difference in perceptions *per se*. The problem arises if partnerships are implemented as if these differences did not exist, when that actually is the case. The question then becomes not how to avoid differences, but to be aware of and effectively manage them [57].

Relevance to practice

How partnership initiatives respond to practice needs, i.e., to what extent partnerships are perceived to matter to practice in a timely way, was also found to be a main reason for the impact. The importance of connection with everyday practice emphasizes the significance of aligning expectations and of deciding on the agendas in early discussions between practice and academia. These are the discussions around what partnerships are to achieve – in a win-win situation for practice and academia.

Our findings show that engagement in education, compared to engagement in research, was perceived as more relevant and useful because it provided more timely benefits for healthcare practice. This finding leads to questions about how to make research more relevant, useful, and how to make "quick wins" [24] to practice from research, or at least how to illustrate future wins in a convincing manner. This thesis and other research [16, 18, 24, 25, 132, 141] suggest that when healthcare professionals actually participate in a research project with questions framed by those who plan and deliver care services together with researchers, the relevance of the research is likely to increase. Furthermore, the practitioners are more likely to use these results. Managing research and healthcare practice as integral activities that involve care staff in various phases of a research project (e.g., defining the research question) can support the research in addressing issues that are relevant to the specific care setting (i.e., questions that matter to care practice). The benefits to practice may be achieved while the research is current (and not just when published) and it would be easier to put findings into action (as the research is based on care needs and performed where it is supposed to be applied) [18, 24].

Dilution or concentration in the organisation of partnerships?

Findings on partnership organisation are also important in this research. Given the limitations on partnership inputs (e.g., research and educational resources and competences; funding for coordination and clinical lecturers), partnership implementation requires consideration of partnership organization so that optimal use is made of available inputs. From this perspective, the findings in this thesis point to an organizational challenge. On the one hand, the findings show the importance of embeddedness and proximity to care practice. This could be interpreted as support for wide-spread distribution of partnership inputs in healthcare practice. In previous research, care professionals report that close contact with researchers is a highly influential factor that influences their use of research evidence [142]. This organizational model stimulates involvement in many practices but with limited inputs at each site.

On the other hand, the findings in this thesis show the need for a critical mass of people with academic experience who can implement partnership initiatives that can improve care practice. Previous research has also commented on the need for a critical mass of scientists with knowledge and skills in different research methods and areas in partnership implementation [143]. This organization model requires engaging fewer practices that have extended inputs at each site. Previous PBRN research discusses a similar challenge – addressing local engagement and system level impact in network organizations of care practices [144, 145].

The importance of how a facilitating role is designed and taken

This findings in this thesis research confirms previous research that partnership implementation in a context with a limited tradition of engagement in research and education requires a lengthy early phase during which collaboration capacity is established. This phase

requires a significant investment in time and resources [20, 146]. One essential investment we found was the use of a facilitating role (i.e., the APHN coordinators). Without such facilitation, collaboration between healthcare practices that target research and education is likely to be difficult to achieve [17].

Previous research has found that work with facilitating roles is directly associated with a positive partnership impact [31]. The findings in this research clarify the importance of how facilitating roles are taken and which competencies the facilitation requires. The research reported on in this thesis emphasizes the importance of building trust and relationships with practice. Bowen et al. [19] describes this process as "relationship broking". They conclude that the broker of relationships in partnerships needs in-depth knowledge of organizational culture, knowledge of the involved individuals, and available time to assume the role [19]. These relationships are facilitated when brokers become a member of the care team and are embedded in practice [75, 76].

In addition, to have competencies from both healthcare practice and academia seems to be of importance. The dual competencies and to be able to talk to and understand both healthcare practice and academia are also recognized by Vindrola-Padros et al. [76] and Bowen et al. [19]. By such competencies, the possibilities to both contribute to science and solving practical problems seems to be strengthened [19]. In this way, the coordinators' work extends beyond conventional research activities (such as data collection and data analysis) and includes taking on complementary roles and interactions with practice [18, 56, 147, 148].

The importance of managing partnerships as unpredictable initiatives

As this thesis reveals, partnerships are complex undertakings that are characterised by dynamic and unpredictable developments and by complex interrelationships between the parts of the partnerships [149]. Consequently, caution is needed when using linear models of partnership implementation that draw upon assumptions from the knowledge transfer paradigm. The findings in this research suggest that we need to consider partnership context in its implementation. We also need to acknowledge the unpredictability of partnership implementation and impact. It is crucial to partnership success to embrace the complexity of partnerships rather than just try to simplify or control it [28]. Thus, the dynamic evolution of partnerships encourages a cautious and flexible approach to partnership implementation [134]. This research suggests that partnership should be managed using continuous dialogue and adaptation in the implementation as the partnership evolves. This should be done by those responsible for the partnership initiative and the people with operational responsibility for the implementation of the partnership initiative in care practice.

An engagement dilemma

An additional dilemma seems to arise when healthcare practice engage in partnerships. Partnerships that link the development and use of knowledge closer to healthcare practice may make research more relevant, more actionable, and thus easier to implement in practice

[31]. This line of reasoning indicates that benefits to care practice occur mainly after the engagement of practice in the research (i.e., when the research is conducted and published in scientific journals).

This thesis shows that the practice benefits from partnership may occur before publication in scientific journals and already as practice is engaged in research and education. The partnership impact identified in this research seems to occur because the primary care practitioners participated in the partnerships even as they engaged in their practice. Hence, practice engagement was central to the partnership implementation and impact. This conclusion strengthens the arguments for partnership initiatives that are found within the engagement paradigm [2] where the focus is on co-production and early engagement between primary care practice and academia.

However, the findings in this thesis also demonstrate that managing practice and research as intertwined activities (with subsequent practice engagement in research and education) requires time and effort by all partners. By its very design, engagement implies the use of resources in partnerships [19]. However, time is more or less definite. If resources are not committed or allocated, present findings shows that a lack of time for practitioners to engage in partnerships and concurrently provide patient care seems to put care practice in a difficult positon, causing a conflicting situation and work stress.

Besides time, the findings in this thesis show that partnerships that follow the engagement paradigm, also by design, blur the boundaries between healthcare practice and academia. This increases the complexity of partnerships and challenges the traditional skills and roles of primary care professionals as well as those of researchers and educators [2, 18, 146, 150]. In addition, as healthcare practice and academia become more intertwined, it seems as potentially different views on timelines, priorities, and incentives become evident [16, 31, 59, 146]. Previous research shows that the interface between these views makes partnership engagement even more challenging. For instance, practice works at a fast pace while the traditional research timeline can last many years [151]. In addition, the primary focus of researchers is often discovery while the primary focus of clinicians is often application, or impact [17, 152].

Taken together, practice engagement seems to be a central component in partnership implementation. However, implementation requires substantial investments in time and effort and taking on different roles in the implementation process. Considering this complexity in relation to the potential impact on practice raises issues about the commitment of resources and the organizations of the partnership. Even though the promise of engagement, perhaps the idea of a complete partnership is not possible or even necessary. In some cases, research and education may need a closer connection, but that does not automatically mean that a full collaborative approach must be applied [24]. More research is needed to better understand which partnership approaches are the most useful and in which contexts they are relevant [2, 18, 32].

This way of understanding the engagement dilemma may partly explain why partnerships that follow the knowledge transfer paradigm is the traditional approach used in healthcare [28]. Because the knowledge transfer paradigm implies a separation between healthcare practice and academia, it becomes easier to maintain traditional roles and less time demanding for practice (as well as for academia) and more business as usual. In addition, the separation between healthcare practice and academia helps reduce the influence of potentially different views on timelines and interests. Such divergent timelines and interests may exist, but they need not be dealt with in the same way as in the engagement paradigm. However, as noted above, partnership engagement is a key to make it happen and make it matter that would be lost if care practice and academia are separated.

6.1   METHODOLOGICAL CONSIDERATIONS

Various choices were made in conducting the three studies of this thesis. These choices, among other things, involved methodological challenges and potential limitations that need to be addressed in the interpretations of the thesis findings.

This thesis addresses an area where little research has been conducted. Therefore, an explorative approach was used to answer the questions of "what", how", and "under what circumstances". In this section, I reflect on the quality of this research in terms of trustworthiness [153]. Trustworthiness refers to evaluation of the quality of the research by establishing its credibility, transferability, dependability, and confirmability.

Credibility concerns the degree to which research findings represent what really happened. Credibility addresses the match between the views of the respondents and the researcher's representation of them [154].

I began this research with a pre-understanding of the concept healthcare-academia partnerships. This pre-understanding likely influenced what I chose to study, the methods I selected and the framing and communication of my findings. If another researcher had conducted the same research, with the same respondents and using the same methods, the findings and their interpretation might have differed from mine.

Hence, reflexivity concerning the preconceptions that I have brought into the research becomes central. To recognize the significance of my own role in the research, I have shortly introduced myself in the Prologue of this thesis, where I present my academic and clinical experience, and my pre-understanding of partnerships between healthcare and academia. Another way of being clear about my preconceptions is the use of the different theoretical perspectives taken in the three studies. For instance, the TEF model was the starting point for analysis in Study II. Although the TEF model was used only in the first step of the analysis, this illustrates our preunderstanding and the model has of course influenced our general thinking.

I am a member of the healthcare organization (approximately 11 500 employees) where the APHN initiative was introduced. My position gave me the benefit of an in-depth

understanding of the context of the initiative. I would not have had that understanding otherwise. My position also helped me access the stakeholders in the initiative. I could interview and re-interview them, using informed follow-up questions, as well as having ongoing dialogues with those interested.

However, being a part of the same organization as the respondents might also have influenced what the respondents chose to answer during the interviews. My position and pre-understanding may also have influenced my interpretation of the findings. In addition, it was also this organization that funded the time to do my doctoral studies. This raises important questions regarding creditability and the need for structures and procedures to ground the findings in the data.

To address this challenge and to enhance the credibility of my research I used the methodological tool of peer debriefing. Other researchers and supervisors with different professional and scientific backgrounds participated in the data collection and data analyses. As I had previous professional relationships with some respondents, another researcher conducted the interviews with those respondents. The research team discussed and critically examined the emerging findings. I also used the methodological tool of member checking. The respondents were allowed to review their interview transcripts and make corrections or add comments.

Trustworthiness touches also on *transferability*, which refers to the degree to which the findings are applicable in other contexts. Qualitative research, such as in this thesis, often offers suggestions about the transferability of findings. Ultimately, however, readers decide whether or not the findings are transferable to another context. Therefore, I have tried to provide sufficient descriptions in this thesis framework and in the three studies so that readers who seek to transfer the findings to their own sites can judge the transferability of the findings. [153]. I have provided detailed descriptions of context, sampling and characteristics of the participants, data collection, data analysis, and illustrative quotations that help the reader to assess the transferability [155].

To increase our knowledge about the implementation and impact of healthcare-academia partnerships, we purposely chose to interview those who we assumed had the best insights into these matters, i.e., managers and coordinators. This purposeful sampling of stakeholders in healthcare practice that were responsible for implementation of the partnership initiative also strengthens the transferability [156].

The studies in this thesis were conducted at a primary healthcare setting in Sweden's most populous region. The findings show that context plays an important role in partnerships. Although other healthcare settings face different challenges than primary healthcare does, it is reasonable to conclude that the factors identified in this thesis are relevant also in other contexts.

Dependability concerns the stability of data over time and under different conditions [157]. The research in this thesis was conducted in primary healthcare practice, which is a context-dependent and dynamic setting [9]. To judge the dependability of the research, in-depth methodological descriptions are described so that readers can understand the research process followed [153]. In addition, an audit trail was used that includes detailed reports of the research process [156].

Confirmability is concerned with establishing that the researchers' findings and interpretations are clearly derived from the data. This requires that researchers show how interpretations and conclusions were reached [154]. Confirmability is established when credibility, transferability, and dependability are achieved [153].

In this research, we have used the perceptions of the managers and coordinators responsible for implementation of the regional initiative launched to increase the integration between primary healthcare and academia. A methodological strength is that almost all coordinators and managers at the coordinating centres in the initiative were interviewed [158]. A broader perspective on partnership implementation and impact would have been achieved if we had also included participants from the units in the networks that were connected to the coordinating centres.

An additional strength of the research methodology is that the research questions were relevant to primary healthcare practice. This relevancy helped us get close to the case and the possibility to study the case over a period of five years.

The use of semi-structured interviews gave us in-depth information about the study topic. We considered other data collection methods (e.g., focus group interviews), but since we wanted to be able to use individual follow-up questions to go into details, there was a risk that focus group interviews would have given us less rich information [159]. The use of interviews as the mainly data gathering method is a possible limitation.

Three theoretical perspectives were used in this thesis. These perspectives were used to provide guidance on where to look and what to look for in the data [88] in relation to each study's aim. In Study I and Study III, the perspectives were also used to structure the data analysis. Knowledge develops from the relationship between empirical data and theoretical models and notions. Thus, the clarification and declaration of these theoretical perspectives are methodological strengths [160].

7 CONCLUSIONS

Primary healthcare practice and academia can be regarded as natural partners in developing research and education to improve care practice. However, establishment of such partnerships is not an easy or linear process. In contrast, their creation is characterised by uncertainty not only about where to start, but also about the impact of different courses of action. Partnerships are complex undertakings that need to be carefully managed. If not, promising partnership initiatives may fail, and even contribute to unwanted impacts.

These research findings also emphasize that partnerships are context-dependent and not a one-size-fits-all intervention. Therefore, it is essential to implement partnerships with precision, tailored to local settings, departing from the stakeholders' requirements and expectations followed by continuous dialogues and adjustments by those involved as the partnerships evolve. By making partnerships happen and matter in practice, trust and interest in research and education can increase, which, in the long run, will help close the gap between practice and academia and contribute to improve care practice.

7.1 IMPLICATIONS FOR PRACTICE

The findings from this thesis have implications for primary healthcare-academia partnership implementation and impact. These implications, however, are not intended as a partnership blueprint. Rather, they are intended as a guiding framework for new partnership initiatives in settings that are similar to the setting in this thesis. The following guidelines are proposed.

Take context and partnership history into account. Partnership initiatives should begin with a clear understanding of practice context and history. Start with parts of the collaboration that are familiar and most easily achieved. This seems to facilitate trust and quick wins and to lower thresholds to further partnership engagement.

Commit significant investments in time and resources. Partnerships require time for initiation and development. It seems to be time demanding to address changes in culture, to get used to and integrate activities that are fairly new in daily practice. In addition, consider to give collaboration time and space to be able to engage in partnerships in compliance with delivery of primary care. Adding collaboration that targets research and education on top of an already busy healthcare practice, in a context where research and education is unfamiliar, without considering care delivery demands is a venture. There is a risk for results below expectations, increased works stress and distrust, side effects that in the long run might draw healthcare and academia apart rather than closing the gap between them.

Use facilitating roles in combination with a critical mass of people. Consider arrangements of facilitating roles with experiences and expertise from both healthcare practice and academia to partnerships, embedded in healthcare practice. With managerial support, they have the time and space to build relationships between healthcare and academia, to help collaboration that targets research and education happen. As demonstrated in this thesis, primary healthcare

practitioners rarely have the time and/or skills to implement partnerships on their own. However, a facilitating role does not necessarily have the power to achieve implementation and partnership impact alone, but need a critical mass of persons with academic experience to make it more feasible.

Pay attention to the perceptions of partnerships. Consider to have an early and on-going dialogue about how partnerships and its parts are perceived by those responsible for the implementation. It seems as it is not the implementation content as such that influences the implementation and its impact, but rather how the parts of the implementation (in this case research, education and primary care) are perceived by those involved. Make mutual benefits possible early in the partnership process by highlighting the agendas of the included partners (academia and healthcare practice), i.e. thoughts about what to achieve and how to do it. Then, take roles and act in such ways that support each other's purposes. Given the unpredictability of partnerships, also apply common follow-ups and partnership adjustments on an as-needed basis.

Consider partnership approaches. Co-creative partnership approaches that depart from practice needs seem to make research and education collaborations more relevant and more useful in practice for improving staff learning and quality of care. However, be cautious about the balance between the resources and efforts needed and benefits for care practice.

Pay attention to the balance between the local level and the system level. Local profiling of partnership content seem to facilitate the fit to local context and initially hastens the implementation. However, to achieve partnership success and system impact, beside local impact, an overall steering towards a common goal is recommended in the development of local profiles. In addition, actions derived from a network approach do not seem to happen simply by constituting networks. If considering networks, suitable resources and methods are needed for such structures.

7.2   FUTURE RESEARCH

The research presented in this thesis contributes to increased understanding of the implementation and impact of healthcare-academia partnerships in primary healthcare. However, this research also poses new questions for future research on the complexity of partnership arrangements.

Even though this research strengthens the idea of partnerships in the engagement paradigm, what works best is likely to vary according to context. Further studies are needed to better understand what different forms of partnership approaches that are most productive and in what contexts they are most applicable.

Impact from partnerships often focus on publications in scientific literature. However, if partnerships are truly based on dual, equally important, agendas between practice and academia, future studies also need to address indicators of successful partnerships from practice perspective and practical impact, parallel to scientific publications.

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