Faculty of Medicine and Health Sciences

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STRENGTHENING PRIMARY HEALTHCARE: A TOOLKIT FOR A PATIENT-CENTRED INTERPROFESSIONAL COLLABORATION AND INTEGRATION

VERSTERKING VAN DE EERSTELIJNSZORG: EEN TOOLKIT VOOR PATIËNTGERICHTE INTERPROFESSIONELE SAMENWERKING EN INTEGRATIE

Proefschrift voorgelegd tot het behalen van de graad van doctor in de medische wetenschappen aan de Universiteit Antwerpen te verdedigen door Muhammed Mustafa Sirimsi

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Antwerp, 2023

Cover lay-out: Ann Roelant – Nieuwe Mediadienst – University of Antwerp
ISBN: **9789057288241**
Wettelijk depotnummer: **D/2023/12.293/43**

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Content

Abbreviations

AITCS: Assessment of Interprofessional Team Collaboration Scale

BPS: Bio-psychosocial

BPSS: Bio-psychosocial working Scale

E.g.: Exempli gratia and means “for example”

EHR: Electronic Health Record

Et al: Et alia and means “and others”

Etc: Etcetera

GP: General Practitioner

ICT: Information and Communication Technologies

IPC: Interprofessional Collaboration

IPCI: Interprofessional Collaboration and Integration

IT: Information Technology

MeSH: Medical Subject Headings

MH: Mental Health

PC: Primary Care

PCA: Primary Care Academy

PCC: Person-centred Care

PCD: People with Chronic conditions informal caregivers Dyads

PC-IPCI: Patient-centred Interprofessional Collaboration and Integration

S3: Sociocracy 3.0

SEPPS: Self-efficacy and Performance in Self-management Support

SMS: Self-management Support

WF: Welfare

Foreword

Time for action: Work package five as part of the Primary Care Academy

A fragmented primary care system and the need for an integrated care landscape have for years been diagnosed in various studies and cited at multiple (inter)national conferences. Followed by this statement, much work has already been done, but much more is needed to achieve integrated healthcare. People who follow the care landscape have already learned from outward experiences. In response to these needs of Flemish Primary Care, the Primary Care Academy (PCA) was established with the support of the Dr Daniël De Coninck Fund, administered by the King Baudouin Foundation, which invested 2.5 million euros for five years of research. The Primary Care Academy is a collaboration between four universities and six colleges of higher education who join forces, resources, research capacity and knowledge to build strong primary care. The Academy focuses on building inclusive, proactive and person-centred primary care for populations with moderately complex care needs. Based on academic and practice-oriented research, the Academy develops optimal roadmaps and hands-on toolkits for primary care policy, practice and education. The Academy also deploys innovative training strategies at the bachelors and master's levels as well as in continuing education of health and social care professions. Furthermore, the Academy continuously taps into society by actively involving patients and context, professionals and policy makers. This participatory approach strengthens the capabilities of the key primary care stakeholders and enables the implementation of proactive and person-centred primary care in Flanders. The PCA exists of multiple work packages (WP) with three concepts (WP3: goal-oriented care, WP4: self-management, and WP5: interprofessional collaboration and integration) to improve and support primary care. As part of the PCA (WP5), Muhammed Mustafa Sirimsi, PhD student at the University of Antwerp, has spent the past four years developing a toolkit to strengthen collaboration and integration in primary care. This toolkit is the result of scientific research conducted in his doctoral project. On the one hand, he delved into literature. From this, valuable concepts, practices and strategies were retained that were brought into this toolkit as building blocks. On the other hand, he surveyed the experiences, needs and preferences of care providers, patients and informal carers, specifically about Flemish primary care. The result is a combination of international scientific evidence with pragmatic experiential knowledge, accompanied by preferences and needs of the Flemish practice, and sociocracy and psychological safety playing primary roles.

Over the entire development process, additional use was made of the expertise of an academic team that worked to make this toolkit operational. This involved using co-design workshops and together with more than 65 participants (healthcare providers, academics and policymakers) a generic toolkit consisting of eight building blocks: (i) self-assessment tool, (ii) preparation for toolkit use, (iii) promoting psychological safety, (iv) consultation techniques, (v) collaborative decision-making, (vi) developing a working group around a specific (local) issue, (vii) person-centred working and (viii) integration of a new team member, has been developed.

Each part of the toolkit starts with an info session in which the principles and concepts used in the toolkit are briefly explained. All tools are available, can be printed and will be integrated into a forthcoming phase integrated into the PCA website. The tools are introduced with testimonials from patients and healthcare providers, based on the interviews and questioning during the research process. In order to work in a targeted way around particular issues, areas for improvement are first identified through the self-assessment tool. Based on these results, care providers can find out their strengths and weaknesses and can use different structured collaboration strategies and consultation forms available in the toolkit. Subsequently, when using the toolkit, caregivers remain in control of the entire care process. The tools made available, serve as facilitators in the collaboration and integration of primary care.

This generic toolkit can be used by all types of healthcare providers, teams and healthcare institutions in primary care. Both healthcare providers working under one roof, and healthcare providers at different locations and levels can use this toolkit to strengthen their collaboration. Possibly, it can be expanded into a toolkit for the entire healthcare system.

The future of the toolkit - Given that this is an open-source (free-to-use) toolkit, the life span of this project is also highly dependent on donations or grants for scientific research and development. Ideally, the toolkit will be further tested and implemented in the healthcare sector and evidence-based improvements will be added to the tools. In addition, led by PCA and in collaboration with another working group, we are in the process of developing a learning platform, in which the knowledge gained will be converted into learning materials for colleges and universities.

Chapter 1: General Introduction

The Fragmented Nature of the Belgian Healthcare System

The Belgian healthcare system is characterized by fragmentation and multiple levels of authority and decision-making, leading to challenges in coordinating and integrating health services[1-4]. This structure is evident in the division of responsibilities among federal, regional and community governments. On the one hand, this multilevel system might facilitate innovation, but it can also bring inconsistencies and inequities in healthcare delivery[3]. As a result, there are differences in the accessibility, quality and cost of health services in the different regions (Flanders, Brussels and Wallonia) and communities[1, 5, 6]. Moreover, there is a strong fragmentation regarding primary, secondary, and tertiary care levels in which care providers, patients, policymakers and researchers experience difficulties[6].

This complex and fragmented healthcare system can hinder effective interprofessional collaboration and coordination among healthcare providers, making it difficult to deliver services, comprehensive care and patient-centred care[1, 5, 6]. While this fragmented nature has major implications for healthcare, it is only one of many barriers that make interprofessional collaboration and integration (IPCI) difficult. Administrative burdens, duplication of effort, and inefficiencies in healthcare delivery and management are also common. Additionally, the lack of interoperability and health information exchange between different healthcare facilities can lead to fragmented care and limited patient continuity[7-12]. Moreover, poor interprofessional collaboration and integration in healthcare can lead to issues related to data interoperability, including data silos and privacy and security risks. Data silos can occur due to isolation, different electronic health record (EHR) systems and other healthcare applications that cannot communicate effectively with each other[13-15]. Whereas privacy and security risks can be caused by poor interprofessional collaboration and integration and can increase the risk of data breaches and unauthorized access to patient data[16-19]. In addition, a lack of clear roles and responsibilities when managing patient data can create security gaps and vulnerabilities, and raise legal and ethical concerns[19, 20]. Addressing these issues requires a serious effort by healthcare professionals, healthcare organizations, healthcare IT stakeholders, policymakers and the government[20]. This includes implementing interoperability standards, incentivising data documentation practices, improving communication and coordination, and ensuring appropriate privacy and security measures[9, 10]. By fostering a culture of interprofessional collaboration and integration, healthcare organisations can implement data interoperability, improve patient outcomes, and improve care efficiency[7, 10].

Healthcare financing and reimbursement

The way healthcare is financed and reimbursed plays a crucial role in the delivery of care. However, if not implemented correctly, it can result in unequal distribution of resources and create barriers to accessing health services[21]. It can also affect the development and implementation of standardized clinical guidelines and protocols[11]. Furthermore, workforce planning and deployment can be fragmented, leading to shortages or excesses of health professionals in some areas or communities[22, 23]. The fee-for-service, bundled, and capitation models are three different payment models used in primary care, with distinct differences in how providers reimburse for services. Firstly, in a fee-for-service payment model, payment is based on the individual services care professionals provide to patients[24]. For each service, whether it's a consultation, medical test or procedure, there is a specific fee associated with it[25]. This payment model could encourage professionals to provide more services and think independently, because they get paid for each service they provide.[26] However, it might also lead to overuse and increased medical costs for the government and/or patients, since more services may be performed to generate more revenue[27]. Secondly, in bundled payment models, a fixed payment is determined for a bundle of services related to a specific treatment, such as surgery or diabetic programs and others[28]. These payments are mostly fixed and pre-determined and should cover all services associated with the procedure, including pre-post-and follow-up care[29]. This model might facilitate care coordination and teamwork between healthcare providers as they work together to deliver quality care within a fixed budget. It can also promote efficiency and cost-effective care as providers are responsible for controlling the cost of care within the bundled payment[30]. Contrary to fee-for-service, undertreatment can occur due to the fixed budget and commercial priorities of healthcare settings and providers[31, 32]. Finally, in a capitation payment model, providers receive a fixed amount per patient and period (eg, monthly or yearly) regardless of the services provided[33]. Healthcare providers are responsible for providing all necessary care for their patients, including preventive, acute, and chronic care, with a fixed budget[34, 35]. This can facilitate population healthcare since providers are responsible for managing the health and well-being of the population, to maintain patient health and prevent costly interventions[36, 37].

Each payment model has advantages and disadvantages. Per-service pricing can incentivise more and better services, but can also lead to overuse and low cost-efficiency[38]. Bundled payments encourage coordination and efficiency, but costs need to be monitored very carefully. A capitation model may require effective care coordination and risk management since complex patients can be considered time-consuming and loss-making and thus end up being avoided as patients. Choosing a payment model depends on several factors, including health system goals, patient population, provider incentives, and financial considerations. A mix of these approaches is proposed in the cappuccino model, where fixed budgets are used next to fee-for-service payments. However, more research is needed to fully understand the (dis)advantages of this system[39, 40].

Relation between interprofessional collaboration and integrated care

In high-income countries, ageing populations are driving a major shift from acute, towards chronic care[41, 42]. Improvements in medicine are increasing people's lifespans and the proportion of the elderly population[43-46], and therefore increasing the need for chronic care services [47, 48].

Three problems are occurring during this shift. First, there is a growing need for primary care services that enable the management of chronic diseases[49-52]. Second, chronic care management places increasing emphasis on interprofessional, team-based care[53]. Health professionals, including physicians, nurses, pharmacists, nutritionists, social workers, and occupational therapists, are cooperating to provide comprehensive and coordinated care for patients with chronic conditions[54-56]. This interprofessional approach enables a more holistic and patient-centred therapeutic approach that considers not only medical needs but also the social, mental and functional aspects of chronic diseases[56]. Third, there is a greater emphasis on the education of patients and self-care support in chronic disease treatment. Patients with chronic conditions often require self-care skills such as medication management, lifestyle changes, and symptom monitoring[57]. Despite a growing global awareness of the significance of preventive care, Belgium’s investment in healthcare prevention is lower compared to other countries within the European Union. According to Eurostat, Belgium spends 0.23% of its GDP on prevention, while the EU average is 0.37%[58]. In general, this demographic shift brought up the importance of primary care, interprofessional care, patient education, self-care, and preventive care in chronic diseases[54, 59].

Integrated care is being suggested as a way to address the needs and preferences of all parties involved in healthcare[60]. Goodwin et al. suggest that integrated care is a method to address the issue of fragmented care, particularly when it negatively affects individuals’ experiences and outcomes in healthcare [61]. Brown et al. indicates that at the heart of integrated care lies a well-coordinated cooperation between care providers[62]. In addition, Leutz et al. defined it as the search to connect all of the healthcare systems with other human service systems (e.g., long-term care, education and vocational and housing services) to improve clinical and non-clinical outcomes such as patient satisfaction and work efficiency[63].

Valentijn et al. identified various aspects of integrated care, organized around three distinct levels. At the macro level (system integration), integration enhances efficiency, quality of care, quality of life and consumer satisfaction. At the meso-level (organisational and professional integration), integration enhances the collective action of organisations across the entire care continuum and partnerships between the professionals both within (intra) and between (inter) organisations. At the micro level (clinical integration), integration enhances the coherence in the primary process of care delivery to individual patients. Finally, functional and normative integration ensure connectivity between the levels[60]. Orchard's definition of interprofessional collaboration (IPC) is the establishment of a partnership between a group of health professionals and a client, wherein they employ a participatory, collaborative, and coordinated approach to engage in shared decision-making regarding health and social issues[7]. According to the World Health Organization (WHO), interprofessional collaboration occurs when numerous caregivers with diverse backgrounds come together alongside patients, families, caregivers, and communities to provide the utmost level of care across various settings[8].

The driving concepts of the IPCI Toolkit

Over the past decades, several attempts have been made to define and improve interprofessional collaboration, integrated care and to determine strategies to enhance cooperation between healthcare providers.[64-67] Furthermore, well-known strategies and methods have been broadly described in the healthcare literature[68, 69]. However, some industries such as the ICT and automotive industry, have been sustainably adopting other ideas and practices to improve collaboration and integration, such as psychological safety and Sociocracy[70-73]. These might be reusable in healthcare settings[74-78]. Throughout this thesis, both Sociocracy and psychological safety are considered as primary concepts.

Sociocracy 3.0 (S3) is based on the sociocracy form of governance, which is based on the equality of individuals. In this system, decisions are made based on 'consent'. And unlike a democratic form of governance where the idea of the minority can be suppressed, in sociocracy all ideas are taken into consideration[79, 80]. This form of governance seeks to create a psychologically safe environment where employees feel safe to take risks and to be vulnerable to each other[78].

S3 is a database that offers its content for free and contains material about the Sociocratic approach to governance including its recent developments. Methods such as the Sociocratic Circle Organisational Methodology, Lean management, Kanban and other techniques can be implemented[79, 81]. It incorporates many elements from agile practices. Agile techniques, such as Lean Management, have their origins in software development, but today they are increasingly used in healthcare[82-84]. They offer an enticing promise to improve quality, capacity and safety in the healthcare environment while limiting or reducing costs[81]. The name "Sociocracy 3.0" refers to the historical evolution the concept of sociocracy has undergone since 1851 when it was first defined[85, 86]. The current refinement of the concept aims to make the form of governance more broadly applicable to as many organisations as possible by incorporating contemporary ideas and techniques[87]. In Sociocracy, seven basic principles (effectiveness, consent, empiricism, continuous improvement, equivalence, transparency, accountability) that are important in shaping an organisation's culture are used and understanding these principles is a good start to getting started with S3 within an organisation[80, 81]. To this, it can be added that S3 does not stand in the way of a scientific approach at all. S3 is not an ideology, but neither is it a rigid pattern of fixed rules[79, 81, 85]. The principles on which S3 relies are broadly in line with what, as Wilson argues in his book Consilience, applies to science: it is measurable, transparent, observational, empirical and heuristic[88].

Next to Sociocracy, psychological safety is described as a shared belief that the team is safe for interpersonal risk-taking[77, 89-91]. Furthermore, Newman et al. identified psychological safety as a critical factor in the understanding of teamwork, team learning, and organizational learning[78]. In a psychologically safe working environment, team members should feel comfortable, and unconcerned about being embarrassed, rejected, or punished for speaking up[78, 92, 93]. By fostering an environment of greater psychological safety, organisations can maximize everyone's skills and competencies[78, 93]. That is why many companies used this concept to bring up innovative ideas or facilitate product development[77]. Although the concept of psychological safety offers many possibilities to achieve interprofessional collaboration and integrated care, it does not cover all aspects of interprofessional collaboration and integration. Additional concepts, tools and practices.

Research aims

This doctoral project aimed to find and develop evidence-based strategies to improve interprofessional collaboration and integration in primary care. The toolkit's tools, strategies, and concepts were gradually identified, adapted, and adopted during its development. This study was initiated with three primary goals in mind: (i) identify the barriers and facilitators as well as success factors and good practices of interprofessional collaboration and integration at micro-, meso- and macro-level to optimise and sustain person-centred and population-based primary care, (ii) develop a roadmap with recommendations for interprofessional collaboration and integration to optimise and sustain person-centred and population-based primary care, and (iii) identify and develop building blocks for educational and practical modules, focussed on enhancing interprofessional collaboration and integration for primary care professionals and other stakeholders.

Three distinct data sources, namely patients, care providers, and literature, were used for this purpose. The intervention's initial building blocks were valuable concepts, practices, and strategies identified through a review of scientific literature, while the experiences, needs and preferences of care providers, patients and informal carers were surveyed, specifically about Flemish primary care (see chapter 2-5). The result is a toolkit (see chapter 6), which is a combination of international scientific evidence with pragmatic experiential knowledge, accompanied by preferences and needs of the Flemish practice, and sociocracy and psychological safety playing primary roles.

Over the entire development process, additional use was made of the expertise of an academic team and care providers that worked together to make this toolkit operational. This involved using co-design workshops with more than 65 participants (healthcare providers, academics and policymakers) a generic toolkit consisting of eight building blocks: (i) self-assessment tool, (ii) preparation for toolkit use, (iii) promoting psychological safety, (iv) consultation techniques, (v) collaborative decision-making, (vi) developing a working group around a specific (local) issue, (vii) person-centred working and (viii) integration of a new team member, was developed.

Thesis outline

This thesis describes two phases: exploration (Chapter2-5) and development (chapter 6), each dealing with a distinct set of research questions. During the exploration phase, three different data sources were used to gain more insights in the needs, preferences, and experiences of Flemish primary care: literature (Chapter 2), patients (Chapter 3) and care providers (Chapters 4 and 5). Based on these studies, various concepts, strategies and methods were identified, developed, adapted and finally adopted into a generic toolkit as described in Chapter 6.

Chapter 2: Scoping review

Chapter 2 describes a scoping review performed to identify strategies and interventions used to improve interprofessional collaboration and integration (IPCI) in primary care.

Chapter 3: Experiences of patients and their informal caregivers

Chapter 3 describes a qualitative study, performed to gain insight in how people living with chronic conditions experience primary healthcare within their informal network.

Chapter 4: Competences of care professionals

Chapter 4 describes a cross-sectional survey using three validated scales, measuring bio-psycho-social-working, self-management, and interprofessional collaboration.

Chapter 5: Experiences and needs of care providers

Chapter 5 describes a qualitative study with a descriptive design using an inductive thematic analysis and exploring care providers' experiences regarding patient-centred IPCI in primary care.

Chapter 6: Development of the IPCI toolkit

This chapter describes the multiyear co-development process of a generic toolkit for the improvement of interprofessional collaboration and integration. Inspired by a mix of interventions from in and outside healthcare, a modular open toolkit was produced that includes concepts as Sociocracy and psychological safety.

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Chapter 2: A scoping review to identify strategies and interventions improving interprofessional collaboration and integration in primary care

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Published in BMJ Open, on October 27, 2022
Link: https://bmjopen.bmj.com/content/12/10/e062111
Doi: 10.1136/bmjopen-2022-062111

A1 Journal, Q2, Impact factor: 2.9

Chapter 2 represents the first data source (literature) of the exploratory phase. In this chapter, strategies and methods from primary care were identified to be used later in several studies. We decided to perform a scoping review in primary care only, in order to detect strategies and methods suitable for the Flemish primary care. On the one hand, the results of this scoping review guided the subsequent chapters (Chapters 3-5) of the exploratory phase. On the other hand, we could draw inspiration from the identified concepts and interventions to set up the development of the IPCI toolkit as described in Chapter 6.

ABSTRACT

Objective: To identify strategies and interventions used to improve interprofessional collaboration and integration in primary care.

Design: Scoping review

Data Sources: Specific Medical Subject Headings (MeSH-terms) were used, and a search strategy was developed for Pubmed and afterwards adapted to Medline, Eric, and Web of Science.

Study selection: In the first stage of the selection, two researchers screened the article abstracts to select eligible papers. When decisions conflicted, three other researchers joined the decision-making process. The same strategy was used with full-text screening. Articles were included if they: (i) were in English, (ii) described an intervention to improve interprofessional collaboration or integration (IPCI) in primary care involving at least two different healthcare disciplines, (iii) originated from a high-income country, (iv) were peer-reviewed; and (v) were published between 2001 and 2020.

Data extraction and synthesis: From each paper, eligible data were extracted, and the selected papers were analysed inductively. Studying the main focus of the papers, researchers searched for common patterns in answering the research question and exposing research gaps. The identified themes were discussed and adjusted until a consensus was reached among all authors.

Results: The literature search yielded a total of 1816 papers. After removing duplicates, screening titles, and abstracts, and performing full-text readings, 34 papers were incorporated in this scoping review. The identified strategies and interventions were inductively categorized under five main themes; (i) Acceptance and team readiness towards collaboration, (ii) acting as a team and not as an individual; (iii) communication strategies and shared decision making, (iv) coordination in primary care, and (v) integration of caregivers and their skills and competences.

Conclusions: We identified a mix of strategies and interventions that can function as 'building blocks', for the development of a generic intervention to improve collaboration in different types of primary care settings and organisations.

Summary of the strengths and limitations of this study

- The review focuses exclusively on primary care; thus, our findings are not directly transferable to other healthcare levels.
- Only articles written in English were included. Therefore, we may have missed valuable literature.
- Only studies performed in high-income countries were included in this review; hence, our findings are not directly transferable to other countries because differences in health systems, financing, governance, title protection and culture can pose significant implementation challenges.
- The risk of bias in the interpretation of the data was minimised by triangulating researchers from different backgrounds (e.g. nurses, pharmacists and a psychologist) throughout the whole review process and conducting the selection of articles with a team of at least two researchers.
- We did not limit the search to the collaboration between specific types of caregivers, or in relation to a specific disease, or condition of patients. Therefore, our data and analysis can be used in the context of or added to a broad scope of interprofessional collaboration and integration in primary care.

INTRODUCTION

As the world population is ageing, the growing complexity of health care and health needs, together with the associated financial challenges[1] and the fragmentation of primary care, [2-4] are prompting a fundamental rethink of how primary care should be organised and how professionals in different settings should collaborate.[5] As approximately one-third of the world population lives with a chronic disease,[6] and as primary care is usually the first point of access to the care system, integrated care at that level in which professionals closely collaborate, both interdisciplinary and interprofessional, is unquestionably important in current and future care organisations.

Interprofessional collaboration can be beneficial to achieving a more integrated primary health care and should overcome the aforementioned challenges and problems. According to the World Health Organisation, interprofessional collaboration occurs when two or more professions work together to achieve common goals.[7] Orchard et al.[8] defines it as involving a partnership between a team of health professionals and a client in a participatory, collaborative and coordinated approach to shared decision-making around health and social issues. As Goodwin et al.[9] and Lewis et al.[10] see an efficient interprofessional collaboration as a prerequisite for integrated care, Edmondson et al.[11] indicated that psychological safety, defined as a shared belief that the team is safe for interpersonal risk-taking, is a critical factor in understanding teamwork and organisational learning.

Next to health professionals, informal caregivers are involved in interprofessional collaboration.[12] According to the World Health Organisation,[13] informal caregivers should be considered full partners in care and they mostly consist of families and friends of the patient. To measure the collaboration and coordination of these formal and informal caregivers many questionnaires are available.[14] The assessment of interprofessional team collaboration scale (AITCS) is an example consisting of the subscales; partnership, cooperation and coordination, and can be deployed in primary healthcare.[15]

To achieve and maintain interprofessional collaboration in primary care, Bardet et al.[16] identified the following key elements: trust, interdependence, perceptions and expectations from the other health care professionals, their skills, their interest for collaborative practice, their role definition and their communication.[17-23] These key elements are also present in the five dimensions of integrated care that Valentijn et al.[24, 25] described in the Rainbow model as follows: system, organisational, professional, clinical, functional, and normative integration. Integrated care and quality collaboration between professionals leads to improved access to care [26], better health outcomes [27], and enhanced prevention.[28, 29]

Although several literature reviews identified strategies to influence, improve or facilitate interprofessional collaboration, a thorough analysis of the interventions is lacking. Most review papers focused on the collaboration of a single type of caregiver or one specific disease.[27, 30-38] Therefore, it is difficult to broaden these findings to primary care and chronic conditions in general.

To fill this gap, we performed a scoping review to identify strategies and interventions improving and/or facilitating interprofessional collaboration and integration (IPCI) in primary care. More specifically, we listed and analysed the existing strategies, interventions and their outcomes, without focussing on a specific profession or disease. Based on the definitions of interprofessional collaboration[7, 8] and integrated care[9, 10, 24, 25], we included papers, thus outlining strategies and interventions working on micro, meso and macro-level. The included papers described organisational, relational and processual factors influenced by these interventions and strategies.

This review was conducted as the first phase of a research project to develop an evidence-based toolkit, guiding health professionals in their transition towards IPCI of different competencies, skills and roles as well as the role of patients and their needs in primary care.

METHODS

We conducted a scoping review using the Arksey and O'Malley framework[39]: (i) identifying the research questions, (ii) identifying relevant studies, (iii) selecting studies, (iv) charting the data and (v) collating, summarising and reporting results. We used the PRISMA-ScR guidelines and the PRISMA-ScR templates to help conduct the scoping review[40].

Step 1: Identifying the research questions

An exploratory literature search was performed preliminarily to identifying the research question on IPCI in primary care. Based on this literature search, we developed the following research question: Which strategies and/or interventions improve or facilitate interprofessional collaboration and integration in primary care? We aimed to search for articles containing generic strategies and methods used in primary care settings, to facilitate IPCI in primary care. Five researchers were involved in identifying this research question for the scoping review.

Step 2: Identifying relevant studies: search strategy

We used specific Medical Subject Headings (MeSH-terms) and free text terms to design a search strategy around the following key concepts: primary care, health care team, integration and interprofessional collaboration. We combined the keywords and MeSH terms presented in Table 1 with the Boolean terms 'OR', 'AND' and 'NOT'. The search strategy was developed for Pubmed and afterwards adapted to Medline, Eric and Web of Science, and was performed between March and June 2020. The full search strategy is available in the supplementary material.

MeSh/search terms and combinations for Pubmed
1. primary care
2. primary healthcare
3. primary health care
1 or 2 or 3 (Title/abstract)
5. integrative team
6. integrative teams
7. collaborative practice
8. collaborative practices
9. interdisciplinary team
10. interdisciplinary teams
11. multidisciplinary team
12. multidisciplinary teams
13. interprofessional team
14. interprofessional teams
15. healthcare team
16. healthcare teams
17. health care team
18. health care teams
5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 (title/abstract)
20. interprofessional collaboration
21. interprofessional teamwork
22. interprofessional team work
23. interdisciplinary collaboration
24. interdisciplinary teamwork
25. interdisciplinary team work
26. multidisciplinary collaboration
20 or 21 or 22 or 23 or 24 or 25 or 26 (All fields)
4 AND 19 AND 27

Table 1: keywords and Medical Subject Headings (MeSH) terms used to identify relevant data.

Step 3: Study selection

Articles were included if they: (i) were in English, (ii) described an intervention to improve interprofessional collaboration or integration in primary care involving at least two different healthcare disciplines, (iii) originated from a high-income country,[41] (iv) were peer-reviewed and (v) were published between 2001 and 2020. Articles were excluded when: (i) the research methods and findings were not thoroughly described, (ii) it concerned opinion papers, (iii) the study focused on a single disease or group of patients/clients and (iv) when the full text was not available.

We used Rayyan[42] to collect and organise eligible articles. In the first stage of the selection, MMS and PVB screened the article abstracts to select eligible papers, according to the inclusion and exclusion criteria, and to eliminate the duplicates. When decisions conflicted, three other researchers (HDL, KDV, KVdB) joined the decision-making process; they were blind to the decisions of the first two reviewers, and each screened a third of the conflicting abstracts. In the second stage of the selection, the initial two reviewers read the full texts of the selected articles. As in the first stage, studies were included or excluded depending on the agreement of both reviewers. When the decisions of the two reviewers conflicted, the other researchers joined the decision-making process and a procedure similar to the one outlined above was followed.

Step 4. Charting the data

From each paper, eligible data were extracted using a self-developed descriptive template. The following characteristics were recorded: a full reference citation (author, title, journal and publication date); the methodology used to conduct the research; a summary of the intervention or strategy used to facilitate IPCI and the impact on IPCI.

Step 5: Collating, summarising and reporting the data

The selected papers were analysed inductively. Studying the main focus of the papers, we searched for common patterns among them, answering the research question and/or exposing research gaps. We, thus, identified themes and subthemes, which were discussed and adjusted until consensus was reached among all authors. Subsequently, all selected papers were coded using the defined themes. Using a tabular overview and summary of the selected literature, the iterative analysis and discussion among the authors were facilitated and allowed the extraction of the interventions and strategies of interest.

Patient and public involvement

This scoping review did not directly involve patients or public.

RESULTS

The literature search yielded a total of 1,816 papers, of which 445 duplicates were removed (Figure 1). Upon screening titles and abstracts of the remaining 1,371 records, only 100 were eligible given the inclusions criteria outlined above. After further reading, 47 studies, lacking an intervention, were excluded. Finally, 19 more articles were excluded because they did not include strategies or interventions. This resulted in 34 papers describing strategies and interventions to facilitate IPCI in primary care. A Flow diagram on the selection procedure is available in figure 1.

Study characteristics

Author and year	Title	Journal	Country	Study design	Intervention/strategy
Bentley et al. 2017	Interprofessional teamwork in comprehensive primary healthcare services: findings from a mixed methods study	Journal of interprofessional care	Australia	Mixed methods study. Online survey, and interviews with managers and practitioners	Introduction of a comprehensive primary healthcare (CPHC) method
Berkowitz et al. 2016	Case study: Johns Hopkins community health partnership: a model for transformation	The journal of delivery science and innovation	USA	Case study	The Johns Hopkins Community Health Partnership (J-CHiP). A community-based intervention. using multidisciplinary care.
Chan et al. 2010	Finding common ground? Evaluating an intervention to improve teamwork among primary healthcare professionals	International journal of quality in health care	Australia	Mixed methods study: Qualitative interviews, observations and a survey assessing multidisciplinary teamwork were used.	A 6-month intervention (The Team-link intervention) consisting of an educational workshop and structured facilitation using specially designed materials, backed up by informal telephone support.
Coleman et al. 2008	Interprofessional ambulatory primary care practice-based educational program	Journal of interprofessional care	USA	A longitudinal cohort study with a quantitative evaluation.	STAR-project: an educational program for teams of nurse practitioners, family medicine residents and social work students to work together at clinical sites in the delivery of longitudinal care in primary care ambulatory clinics.
Curran et al. 2007	Evaluation of an interprofessional continuing professional development initiative in primary health care	Journal of continuing education in the health professions	Canada	Mixed methods study: An evaluation research design, pre- to post-study with quantitative and qualitative instruments.	Introducing The Building a Better Tomorrow Initiative (BBTI), which is a continuing professional development (CPD) program.
Goldman et al. 2010	Interprofessional primary care protocols: a strategy to promote an evidence-based approach to teamwork and the delivery of care	Journal of interprofessional care	Canada	Qualitative study.	Implementation of an interprofessional protocol
Grace et al. 2014	Flexible implementation and integration of new team members to support patient-centred care	The journal of delivery science and innovation	USA	Mixed methods: Interviews and a survey with primary care professionals.	Introduction of interprofessional primary care protocols
Hilts et al. 2013	Helping primary care teams emerge through a quality improvement program	Oxford academic: family practice	Canada	A qualitative exploratory case study approach.	Introducing a quality improvement program.
Josi et al. 2020	Advanced practice nurses in primary care in Switzerland: an analysis of interprofessional collaboration	BMC nursing	Switzer-land	Qualitative study with an ethnographic design.	Integration of an advanced practice nurse in a primary care team.
Kim et al. 2019	What makes team communication effective: a qualitative analysis of interprofessional primary care team members' perspectives	Journal of interprofessional care	USA	Qualitative study. Grounded theory method of constant comparison.	Standardized communication tools used with the implementation of the patient-centred medical home (PCMH)

Kotecha et al. 2015	Influence of a quality improvement learning collaborative program on team functioning in primary healthcare	Journal of collaborative family healthcare	Canada	A qualitative study using a phenomenological approach was conducted as part of a mixed-method evaluation.	Quality Improvement Learning Collaborative Program to support the development of interdisciplinary team function, and improve chronic disease management, disease prevention, and access to care.
Légaré et al. 2020	Validating a conceptual model for an inter-professional approach to shared decision making: a mixed methods study	Journal of evaluation in clinical practice	Canada	Qualitative study. Thematic analysis of the transcripts and a descriptive analysis of the questionnaires were performed.	An interprofessional shared decision-making model.
Lockhart et al. 2019	Engaging primary care physicians in care coordination for patients with complex medical conditions	Canadian family physician	Canada	Qualitative study. Care professionals were interviewed 14 to 19 months after the initiation of an intervention.	Initiation of the Seamless Care Optimizing the Patient Experience (SCOPE) project.
Macnaughton et al. 2013	Role construction and boundaries in interprofessional primary health care teams: a qualitative study	BMC health service research	Canada	A qualitative, comparative case study with observations was conducted.	Introduction of a model to explore how roles are constructed within interprofessional health care teams. It focuses on elucidating the different types of role boundaries, the influences on role construction and the implications for professionals and patients.
Mahmood-Yousef et al. 2008	Interprofessional relationships and communication in primary palliative care: impact of the gold standards framework	The British journal of general practice	United-kingdom	Qualitative interview case study.	Adoption of an interprofessional collaboration framework to investigate the extent to which the framework influences interprofessional relationships and communication, and to compare general practitioners' and nurses' experiences.
Morgan et al. 2015	Observation of interprofessional collaborative practice in primary care teams: an integrative literature review	International journal of nursing studies	New Zealand	Integrative literature review	Several strategies to improve interprofessional collaboration in primary care teams
Morgan et al. 2020	Collaborative care in primary care: the influence of practice interior architecture on informal face-to-face communication—an observational study	Health environments research & design journal	New-Zealand	Qualitative study with observations	Changing the architecture of primary care settings to explore the influence of primary care practice interior architecture on face-to-face on-the-fly communication for collaborative care.
Murphy et al. 2017	Change in mental health collaborative care attitudes and practice in Australia impact of participation in MHPN network meetings	Journal of integrated care	Australia	Quantitative study: an online survey.	Introduction of the Mental Health Professionals Network. Investigating attitudinal and practice changes amongst health professionals after participation in MHPN's network meetings.
Pullon et al. 2016	Observation of interprofessional collaboration in primary care practice: a multiple case study	Journal of interprofessional care	New-Zealand	Qualitative study, using a case study design with observations.	Identifying existing strategies to maintain and improve interprofessional collaboration in primary care practices.
Reay et al. 2013	Legitimizing new practices in primary health care	Health care management review	Canada	A qualitative, longitudinal comparative case study.	Developing effective interdisciplinary teams in primary health care.
Reeves et al. 2017	Interprofessional collaboration to improve professional practice and healthcare outcomes	Cochrane review	Canada	Systematic review	Nine interventions were analysed.
Robben et al. 2012	Impact of interprofessional education on collaboration attitudes, skills, and behaviour among primary care professionals	Journal of continuing education in the health professions	Netherlands	Mixed methods study: Before-after study, using the Interprofessional Attitudes Questionnaire, Attitudes Toward Health Care Teams Scale, and Team Skills Scale. Additionally, semi-structured interviews were conducted	Introduction of an interprofessional education program with interdisciplinary workshops.

Rodriquez et al. 2010	The implementation evaluation of primary care groups of practice: a focus on organizational identity	BMC family practice	Canada	Qualitative study. An in-depth longitudinal case study was conducted over two and a half years.	Implementation of primary care groups of practice, with a focus on the emergence of the organizational identity.
Rodriquez et al. 2015	Availability of primary care team members can improve teamwork and readiness for change	Health care management review	USA	Quantitative study with a survey, using path analysis.	A four-stage developmental interprofessional collaborative relationship-building model: To assess primary care team structure (team size, team member availability, and access to interdisciplinary expertise), teamwork, and readiness for change.
Russell et al. 2018	Contextual levers for team-based primary care: lessons from reform interventions in five jurisdictions in three countries	Health service research	Canada	An international consortium of researchers met via teleconference and regular face-to-face meetings using a Collaborative Reflexive Deliberative Approach to re-analyse and synthesize their published and unpublished data and their own work experience.	Determining existing strategies and methods to improve interprofessional collaboration and integration in primary care.
Sargeant et al. 2008	Effective interprofessional teams: “contact is not enough” to build a team	Journal of continuing education in the health professions	Canada	Qualitative, grounded theory study.	Introducing an interprofessional educational program.
Tierney et al. 2019	Interdisciplinary team working in the Irish primary healthcare system: analysis of ‘invisible’ bottom-up innovations using normalisation process theory	Journal of health policy	Ireland	Mixed methods study: An online survey and an interview study.	Bottom-up innovations using Normalisation Process Theory: (1) Design and delivery of educational events. in the community for preventive care and health promotion. (2) Development of integrated care plans for people with complex health needs. (3) Advocacy on behalf of patients.
Valaitis et al. 2020	Examining interprofessional team structures and processes in the implementation of a primary care intervention (health tapestry) for older adults using normalization process theory	BMC family practice	Canada	Qualitative study. Applying the NPT and a descriptive qualitative approach embedded in a mixed-methods, pragmatic RCT.	Strengthening Quality [Health TAPESTRY] is a primary care intervention aimed at supporting older adults that involves trained volunteers, interprofessional teams, technology, and system navigation.
Van Dongen et al. 2018a	Suitability of a programme for improving interprofessional primary care team meetings	International journal of integrated care	Netherlands	Mixed methods study: a process evaluation using a mixed-methods approach including both qualitative and quantitative data.	Introducing a multifaceted programme including a reflection framework, training activities and a toolbox.
Van Dongen et al. 2016	Interprofessional collaboration regarding patients’ care plans in primary care: a focus group study into influential factors	BMC family practice	Netherlands	Qualitative study with an inductive content analysis.	Improving interprofessional collaboration by using patients’ care plans.
Van dongen et al. 2018b	Development of a customizable programme for improving interprofessional team meetings: an action research approach	International journal of integrated care	Netherlands	Qualitative study with an action research approach.	A Customizable Programme for Improving Interprofessional Team Meetings
Wener & Woodgate et al. 2016	Collaborating in the context of co-location: a grounded theory study	BMC family practice	Canada	A qualitative research paradigm where the exploration is grounded in the providers’ experiences.	A four-stage developmental interprofessional collaborative relationship-building model to guide health care providers and leaders as they integrate mental health services into primary care settings.
Wilcock et al. 2002	The Dorset Seedcorn project: interprofessional learning and continuous quality improvement in primary care	British journal of general practice	United Kingdom	Mixed methods study. Participants kept reflective journals. The evaluation was undertaken using a mix of	The Dorset Seedcorn Project: interprofessional learning and continuous quality improvement in primary care. Implementing the principles and methods of

Young et al. 2017	Shared care requires a shared vision: communities of clinical practice in a primary care setting	BMC health service research	New Zealand	Qualitative study with observations. A focused ethnography of nine 'Communities of Clinical Practice.	Introducing the 'Community of Clinical Practice' (CoCP) model. Forming a vision of care which is shared by patients and the primary care professionals involved in their care.

Table 2: An overview of the characteristics of the selected articles.

Findings

Five main themes, essential for IPCI, emerged from our analyses: (i) Acceptance and team readiness towards collaboration (n=21), (ii) acting as a team and not as an individual (n=26); (iii) communication strategies and shared decision making (n=16), (iv) coordination in primary care (n=20), and (v) integration of caregivers and their skills and competences (n=16). An overview of the interventions is presented in Table 2, while an overview of the articles sorted in themes is presented in Table 3.

Articles	Acceptance and team readiness towards collaboration	Acting as a team and not as an individual	Communication strategies and shared decision making	Coordination in primary care	Integration of caregivers and their skills and competences
Bentley et al.[43]		X	X	X	
Berkowitz et al.[44]				X	
Chan et al.[45]	X	X		X	
Coleman et al.[46]	X		X	X	
Curran et al.[47]	X	X	X	X	X
Goldman et al. [48]	X	X	X		X
Grace et al.[49]	X	X	X		X
Hilts et al.[50]	X	X			X
Josi et al.[51]		X	X		X
Kim et al.[52]	X		X	X	
Kotecha et al.[53]		X	X	X	
Légaré et al.[54]	X	X	X		X
Lockhart et al.[55]		X		X	
MacNaughton et al.[56]		X		X	X
Mahmood-Yousef et al.[57]	X		X	X	
Morgan 2015[58]	X	X	X		
Morgan 2020[59]				X	
Murphy et al.[60]	X			X	X
Pullon et al.[61]		X		X	
Reay et al.[62]	X	X		X	
Reeves et al.[63]			X	X	
Robben et al.[64]		X			
Rodriquez 2010.[65]					X

Rodriquez 2015[66]	X	X		X	
Russell et al.[67]	X	X			X
Sargeant et al.[68]	X	X		X	X
Tierney et al.[69]	X	x	X		X
Valaitis et al.[70]		X		X	X
Van Dongen 2018a[71]	X	X	X	X	X
Van Dongen 2018b[72]	X	X	X		X
Van Dongen 2016[73]		X			
Wener & Woodgate[74]	X	X		X	X
Wilcock et al.[75]	X	X			
Young et al.[76]	X	X	X		
# Articles	**21**	**26**	**16**	**20**	**16**

Table 3: Articles sorted in themes (X= paper included under that theme)

Theme 1: Acceptance and team readiness towards collaboration

Twenty-one articles provided strategies to improve the acceptance and team readiness towards collaboration.[45-50, 52, 54, 57, 58, 60, 62, 66-69, 71, 72, 74-76] Before being able to collaborate, caregivers need to accept working as a team. Team readiness towards collaboration occurs when team members obtain the right mindset to take necessary measures for efficient collaboration. This does not mean that an efficient collaboration has been reached, but both acceptance and team readiness were a prerequisite to achieving it. Acceptance and team readiness of caregivers towards collaboration were strongly influenced by their attitude, awareness, knowledge and understanding, and caregiver satisfaction.

Interventions on changing caregivers' attitudes towards collaboration seem to facilitate teamwork.[77] Workshops and information sessions were organised to make changes in caregivers' attitudes, in which advantages of teamwork and finding common ground were explained and lectured.[46, 54, 66, 67, 71, 72, 74, 76] Basic knowledge about the potential of teamwork was learned using logical explanations.[44, 46, 54, 66, 67, 71, 72, 74, 76] Caregivers to whom the advantages of collaboration were explained were more likely to accept and adopt the principles of interprofessional collaboration. Simple and accessible knowledge transfer seems to be an important characteristic of a successful intervention on the attitude and knowledge of caregivers.[45, 57, 68, 71, 72]

Some articles[46, 48, 52, 60, 71, 76] reported on strategies to increase awareness about collaboration in primary care. Increased awareness resulted in a better acceptance and team readiness towards collaboration. Making caregivers aware of their shortcomings and the need for collaboration with different disciplines seemed an effective way to facilitate interprofessional collaboration. In addition to awareness, potential improvements in care quality[46, 49, 75], caused by better collaboration, motivate caregivers to change their attitude. Furthermore, some studies[47, 50, 58, 62, 69, [74, 75] reported that increased caregiver satisfaction was considered as a facilitator of collaboration between caregivers.

Theme 2: Acting as a team and not as an individual

Twenty-six articles provided strategies to act as a team and not as an individual.[43, 45, 47-51, 53-56, 58, 61, 62, 64, 66-76] In some articles[62, 66, 68, 74, 75], this was mentioned as collaborative behaviour, which was considered to be a facilitator of teamwork. Moreover, showing mutual respect and trust[53, 54, 56, 66, 71, 72, 74-76] between caregivers were important facilitators towards collaboration: it improves acting as a team, and it supports a safe team climate. An environment of greater psychological safety improved collaborative behaviour, and in some cases, it replaced working in silos with working as a team.[47, 50, 55, 61, 73, 75]

Developing and enhancing a shared vision, shared values and shared goals were mentioned as facilitators towards interprofessional collaboration.[43, 45, 49, 54, 74, 76] This was achieved by a structural inclusion of every team member in the development of the teams' vision, values and goals.[76] By simply writing down these principles, caregivers were more likely to participate in developing shared principles.[45, 49] Although the development process was not explained in detail, three articles mentioned that once developed, shared vision, goals and values were crucial to maintaining a beneficial collaboration.[54, 74, 76] To establish these shared principles, a patient-centred focus may be an important asset. By prioritising the patient's needs and preferences, caregivers can find common ground more easily.[51, 69-72, 76]

Leadership seems of utmost importance to act as a team. Strategies towards collaborative leadership and shared leadership were mentioned in the articles,[43, 48, 51, 53, 56, 64, 67, 71, 73] and leaders and decision makers should be aware of the potential effects of policy and structural changes on interprofessional teamwork. By using a clear role assignment, caregivers can prevent issues in their collaboration.[58, 71, 74, 76] However, in one case,[50] a rotational leadership was implemented and suggested, in which there was no permanent leader.

One paper emphasised that awareness of potential unintended negative effects of changes on the functioning of interprofessional teams should be taken into account by decision makers.[51]

Theme 3: Communication strategies and shared decision-making

Sixteen articles provided communication strategies and strategies to facilitate shared decision-making, to improve interprofessional collaboration in primary care.[43, 46-49, 51-54, 57, 58, 63, 69, 71, 72, 76] These strategies can be further delineated into the following subthemes: (i) knowledge about each other,[49, 69, 71] (ii) formal and informal meetings,[43, 47, 51, 58, 63, 71, 72] (iii) the use of structured guidelines and protocols,[48, 49, 69, 72] (iv) conflict resolution[46, 51, 57, 71, 72, 76] and (v) relational equality.[52-54, 76]

Knowing each other's professional roles and tasks seems a precondition for teamwork. However, knowing more about each other's family situation, interests and hobbies was also mentioned to be important to improve the communication and collaboration between caregivers.[49, 69, 71]

Both formal[47, 51, 63, 71, 72] and informal[43, 58, 72] team meetings, mainly happening between caregivers working in the same practice (under one roof),[58] were considered as an important communication strategy. Formal meetings were mostly used to share information about patients or clients, distribute tasks and identify and solve problems in the organisation. Planning and structuring a team meeting can increase the efficiency and productivity of these meetings.[47, 51, 63, 71, 72] Informal meetings were important to know more about each other and facilitated the trust relations between caregivers. Information that could not be shared in the formal meetings often appeared in the informal meetings. Even lunches with team members were used as a communication strategy.[43, 58, 72]

Structured guidelines, standardised tools and protocols were used to improve the communication and coordination between caregivers working in primary care. These protocols provided more effective communication and the provision of an evidence-based approach towards collaboration and care delivery. Besides using protocols, workshops were organised to improve communication.[48, 49, 69, 72]

Making decisions as a team was an indicator of good and effective communication. Shared decision-making was mentioned in nine studies,[46, 51-54, 57, 71, 72, 76] and our analysis identified conflict resolution[46, 51, 57, 71, 72, 76] and relational equality[52-54, 76] as key factors to improve shared decision-making.

Theme 4: Coordination in primary care

By collaborating with different disciplines and professions, many caregivers were experiencing problems regarding information sharing[44, 45, 52, 53, 61, 62, 68, 70, 71, 74] and referring[43, 44, 46, 47, 52, 53, 57, 66, 71, 74] between primary health care workers. Twenty articles, therefore, provided strategies to improve coordination in order to ameliorate information sharing between caregivers, to facilitate referrals for the patient and to guarantee the continuity of care.[43-47, 52, 53, 55-57, 59-64, 66, 70, 71, 74] Accordingly, reciprocity and reciprocal interdependence were shown to play a crucial role in the coordination of primary care.[66, 74]

Co-location and the importance of architecture and building characteristics were, in some cases, mentioned as influential factors for collaboration.[56, 59, 63] By optimising the architecture and working under one roof, brief face-to-face interactions may increase. The architecture could be optimised by having shared spaces, thus leading to increased staff proximity or visibility. Especially informal communication was positively affected by the presence of convenient circulatory (e.g. foyers and lobbies) and transitional (e.g. courtyards, verandas, and corridors) spaces.[56, 59, 63] Additionally, weekly or monthly face-to-face meetings were organised to coordinate care. Face-to-face meetings and electronic task queues facilitate information sharing and efficient care coordination for complex patients.[59, 63]

Theme 5: Integration of caregivers and their skills and competences

Fifteen papers provided strategies to improve the integration of caregivers and their skills and competences in primary care practices[47-51, 54, 56, 60, 65, 67-72, 74] and tried to get the most out of every team member's presence.

For new team members, a successful integration was facilitated by welcoming the newcomers and making them know and understand the vision of the practice. Inclusion of the caregiver required additional proactive efforts regarding communication and coordination among practice members.[49, 74] In some cases, a personal, one-to-one meeting with the new team member could facilitate problem-solving.[49]

Eleven papers presented an improved integration of caregivers skills and competences, as a facilitator for task distribution and role clarification.[47, 48, 50, 51, 54, 56, 67, 70-72, 74] Knowing each other's capabilities, including skills and competences, was very important in this regard.[48, 50, 56, 74] Additionally, making sure that caregivers not only know each other's skills and competences but also enable more transparency about their daily needs and preferences were mentioned as facilitators.[50, 56, 67, 71, 74] Six articles presented strategies to optimise the use of team members' skills and competences. By acknowledging and affirming their capabilities, integration of skills and competences was facilitated.[54, 60, 65, 69, 71, 74]

In one article, researchers indicated that the organisation of team communication-training workshops and implementation of flexible protocols gave practice stakeholders significant discretion to integrate new care team roles to best fit local needs. Furthermore, it improved team communication and functioning because of increased engagement and local leadership facilitation.[49]

DISCUSSION

This scoping review identified five themes for interventions and strategies aimed at improving and facilitating IPCI in primary care. The first category, which incorporates acceptance, and team readiness, was a precondition for enhancing and maintaining efficient interprofessional collaboration. Accepting to collaborate requires a change of attitude, which involves valuing team members and actively soliciting the opinions or receiving feedback from other team members.[78] An major barrier to adopting a suitable attitude towards collaboration is the difficulty and complexity of sharing responsibility for patient care within a team. [79, 80] Making caregivers aware of their shortcomings and the need for collaboration with different disciplines are effective ways to facilitate interprofessional collaboration.[46, 48, 52, 60, 71, 76] In addition, Liedvogel et al.[81] demonstrates that experiencing teamwork itself increases the awareness of the advantages, and the importance of collaboration, as well as gives caregivers opportunities to demonstrate their skills and capabilities. In the broader community, increased awareness of the importance of interprofessional collaboration can lead to an improved experience and understanding of the totality of healthcare services.[82] Furthermore, according to Lockwood and Maguire et al.,[83] it can also help to reduce the sense of isolation experienced by solo medical practitioners.

Second, collaborative behaviour has been described as a facilitator of teamwork.[62, 66, 68, 74, 75] To enhance and maintain a collaborative behaviour, the development of shared principles (such as shared vision, values and goals) is an important prerequisite.[43, 45, 49, 54, 74, 76] Our review revealed that maintaining a safe team climate in which care professionals feel comfortable is important to act as a team and not as an individual.[47, 50, 55, 61, 73, 75] Although psychological safety is not often mentioned in primary care research,[22] Edmondson et al.[11] and Kim et al.[84] have indicated the essential role of a safe workplace environment in enhancing teamwork. Team psychological safety is defined as a shared value; the team is safe for interpersonal risk taking.[85] This means that team members feel they will not be punished or humiliated for speaking up with ideas, questions, concerns or mistakes. A team may not be able to collaborate properly if there is a lack of psychological safety; hence, it is assumed that psychological safety is a necessary but insufficient condition for increasing interprofessional collaboration and workplace effectiveness.[86]

Third, structured guidelines and protocols seem to be beneficial for communication between care professionals, thereby impacting IPCI. Team meetings, especially formal meetings can be held more efficiently by using protocols, that have positive effects on hierarchy and conflicts resolution between team members.[87] Although interventions in our review did not give attention to informal meetings as much as existing literature[88-90], Burm et al.[88] indicated that, by recognising the importance of informal meetings, care providers are more motivated to organise or participate in informal meetings. These meetings tended to be ad-hoc and improvised, and in some cases discussion topics were recorded in notebooks.[89, 90] The shared decision-making model has been put forward as a guide for discussing and making decisions in the most effective way.[91] This model includes three principles: recognizing and acknowledging that a decision is required, knowing and understanding the best available evidence, and incorporating the patient’s values and preferences into the decision.[92]

Fourth, as an element of interprofessional collaboration and integration, care coordination is of utmost importance for patient safety. The situation-background-assessment-recommendation protocol is an existing method to perform information sharing efficiently and appropriately.[93] In addition, Lo et al.[94] suggest that the protocol may be a cost-effective method for coordinating between general practitioners and nurses.[94] To solve problems regarding care coordination, especially after the Covid19 pandemic, the use of digital healthcare tools was established.[95] Fagherazzi et al.[96] indicated that these digital tools improved triage and risk assessment.

Finally, optimal integration of caregivers skills and competences has been associated with maximalising every team member's presence and shortening the adaptation process of new team members.[97] Family caregivers provide a significant portion of health and support services to individuals with serious illnesses; however, existing literature and health care systems have often overlooked them and mostly focused on integrating care professionals.[98, 99] Friedman et al.[98] suggest using a framework, in which the family caregiver is an indispensable partner of care professionals and patients.

Although all interventions or strategies are useful to a certain point, none is suitable to be used in isolation as a unique solution for IPCI in primary care. However, a mix of the interventions and strategies compiled in this scoping review may be capable of doing so. The consistency, design, and order of this mix of interventions and strategies cannot be specified based on the results of this scoping review.

This scoping review has several limitations. The review focuses exclusively on primary care; thus, our findings are not directly transferable to other healthcare levels. Only studies performed in high-income countries were included in this review; hence, our findings are not directly transferable to other countries because differences in health systems, financing, governance, title protection and culture can pose significant implementation challenges. In addition, by including only English-language articles and avoiding the grey literature, we might have missed some relevant papers. It is worthwhile to note, that this scoping review aimed to identify interventions that can improve interprofessional collaboration and integration in primary care and to list their impact on outcomes related to collaboration and integration. Our review did not report the effectiveness of interventions regarding health outcomes. Contrary to generic interventions focusing on IPCI, interventions focusing on a single disease and improving health outcomes were implemented more successfully and were evaluated in a more sophisticated way, using validated scales.[27, 100-102]

We selected articles based on WHO's[7] and Orchard et al.'s[8] definition of interprofessional collaboration. For integrated care, we adopted the definitions of Lewis et al.'s[10] and Valentijn et al.'s[25] definitions, which represent a widely accepted consensus. However, there are many other definitions of IPCI care that, if adopted, could affect the inclusion or exclusion of articles.

The literature has established that researchers can influence the interpretation of data. This risk of bias was minimised by triangulating researchers from different backgrounds (e.g. nurses, pharmacists and a psychologist) through the whole process and conducting the selection of articles with a team of at least two researchers. This triangulation, intensive cooperation and inductive process increased the credibility and reduced the risk of bias to the interpretation of the data based on preconceived understanding and personal opinions.

A strength of this review is the fact that we did not limit the search to the collaboration between specific types of caregivers, or in relation to a specific disease, or condition of patients. Therefore, our data and analysis can be used in the context of or added to a broad scope of IPCI in primary care. Furthermore, we performed an inductive analysis within a multidisciplinary team of researchers, to expand the analysis and to identify generic strategies and interventions.

CONCLUSION

This scoping review identified five categories of strategies and interventions to improve or facilitate IPCI in primary care: (i) acceptance and team readiness towards collaboration, (ii) acting as a team and not as an individual, (iii) communication strategies and shared decision making, (iv) coordination in primary care and (v) integration of caregivers and their skills and competences. We did not identify a single strategy or intervention which is broad or generic enough to be used in every type of primary care setting.

We can conclude that a mix of the identified strategies and interventions, which we illustrated as 'building blocks', can provide valuable input to develop a generic intervention to be used in different settings and levels of primary health care.

Figure legends: Figure 1: PRISMA flow diagram. PRISMA, Preferred Reporting Items for Scoping reviews (*IPCI= Interprofessional collaboration or integration)

Funding statement: This research was funded by fund Daniël De Coninck, King Baudouin Foundation, Belgium. The funder had no involvement in this study. Grant number: 2019-J5170820-211588

Contributors: All listed authors meet authorship criteria and no others meeting the criteria have been omitted. The following role distribution was given to perform the scoping review: (i) development of the research question and establishment of the search strategy: MMS, HDL, KdV, KVdB, and PVB**,** (ii) database search: MMS and PVB**,** (iii) record screening: MMS, PVB, HDL, KdV, and KVdB performed abstract and full text screenings, (iv) data analysis: MMS, HDL, KdV, KVdB, and PVB**,** (v) discussion construction: MMS, HDL, KdV, KVdB, PP, RR, and PVB**,** (vi) writing – review & editing: MMS, HDL, KdV, KVdB, PP, RR, and PVB.

Competing interests: None declared.

Patient consent for publication: Not applicable.

Ethics approval: This study did not involve human participants and did not require ethics approval.

Data availability statement: All relevant data is available in the article and supplementary materials. No other data are available.

Supplementary material: A detailed description of the search process is provided in the supplementary material.

Acknowledgements:

We are grateful for the partnership with the Primary Care Academy (www.academie-eerstelijn.be) and want to thank the King Baudouin Foundation and Fund Daniel De Coninck for the opportunity they offer us for conducting research and have impact on the primary care of Flanders, Belgium. The consortium of the Primary Care Academy consists Lead author: Roy Remmen–roy.remmen@uantwerpen.be—Department of Primary Care and Interdisciplinary Care, Faculty of Medicine and Health Sciences. University of Antwerp. Antwerp. Belgium; Emily Verté—Department of Primary Care and Interdisciplinary Care, Faculty of Medicine and Health Sciences. University of Antwerp. Antwerp. Belgium, Department of Family Medicine and Chronic Care, Faculty of Medicine and Pharmacy. Vrije Universiteit Brussel. Brussel. Belgium; Muhammed Mustafa Sirimsi—Centre for research and innovation in care, Faculty of Medicine and Health Sciences. University of Antwerp. Antwerp. Belgium; Peter Van Bogaert—Workforce Management and Outcomes Research in Care, Faculty of Medicine and Health Sciences. University of Antwerp. Belgium; Hans De Loof—Laboratory of Physio pharmacology, Faculty of Pharmaceutical Biomedical and Veterinary Sciences. University of Antwerp. Belgium; Kris Van den Broeck—Department of Primary Care and Interdisciplinary Care, Faculty of Medicine and Health Sciences. University of Antwerp. Antwerp. Belgium.; Sibyl Anthierens—Department of Primary Care and Interdisciplinary Care, Faculty of Medicine and Health Sciences. University of Antwerp. Antwerp. Belgium; Ine Huybrechts—Department of Primary Care and Interdisciplinary Care, Faculty of Medicine and Health Sciences. University of Antwerp. Antwerp. Belgium.; Peter Raeymaeckers—Department of Sociology, Faculty of Social Sciences, Faculty of Social Sciences. University of Antwerp. Belgium; Veerle Buffel- Department of Sociology; centre for population, family and health, Faculty of Social Sciences. University of Antwerp. Belgium.; Dirk Devroey- Department of Family Medicine and Chronic Care, Faculty of Medicine and Pharmacy. Vrije Universiteit Brussel. Brussel.; Bert Aertgeerts—Academic Centre for General Practice, Faculty of Medicine. KU Leuven. Leuven, Department of Public Health and Primary Care, Faculty of Medicine, KU Leuven.

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Supplemental material

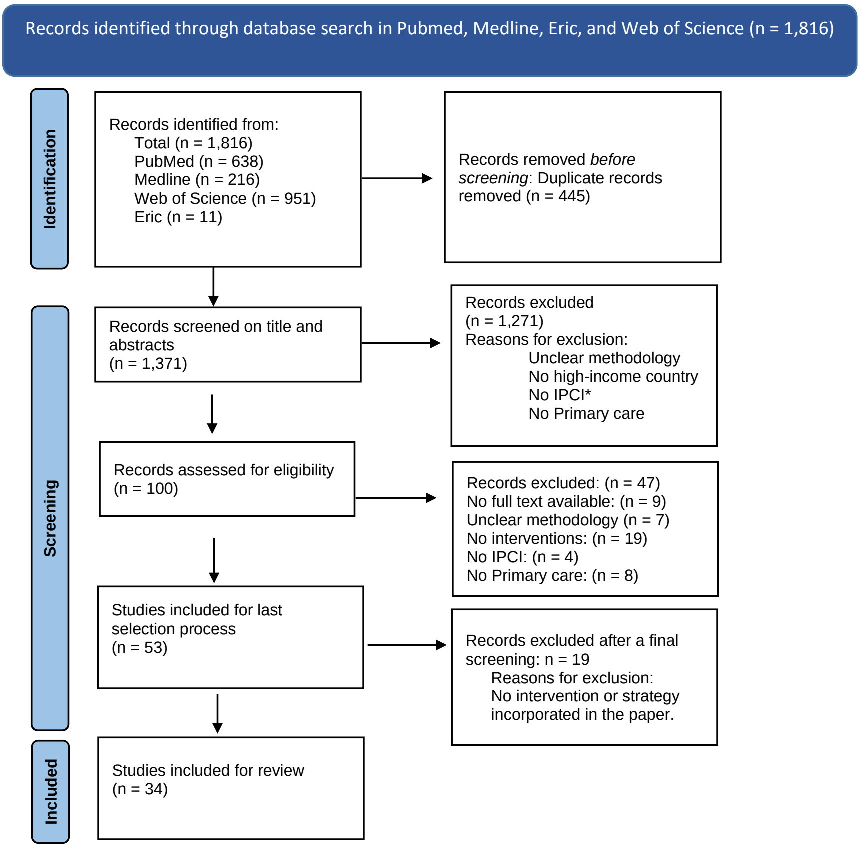

Figure 1: PRISMA flow diagram. PRISMA, Preferred Reporting Items for Scoping reviews (*IPCI= Interprofessional collaboration or integration)

Chapter 3: How do people living with chronic conditions and their informal caregivers experience primary care?
A phenomenological-hermeneutical study

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Published in Journal of Clinical Nursing, 2022 Feb 17, doi: 10.1111/jocn.16243
A1, Q1, IF = 4,42

Chapter 3 represents the second (patients) data source of the exploratory phase. In this chapter, the needs, preferences and experiences of patients with moderate complex care needs were identified. We decided to perform a qualitative study and interviewed patients together with their informal caregivers. On the one hand, the results of this study guided the subsequent chapters (Chapters 4 and 5) of the exploratory phase. On the other hand, we could draw inspiration from the needs and experiences of patients and their informal caregivers to set up the development of the IPCI toolkit as described in Chapter 6.

ABSTRACT

Keywords: primary care, chronic illness, qualitative study, lived experiences, phenomenological-hermeneutical, nursing practice

Aims and objectives: Gaining insight into how people living with chronic conditions experience primary healthcare within their informal network.

Background: The primary healthcare system is challenged by the increasing number of people living with chronic conditions. To strengthen chronic care management, literature and policy plans point to a person-centred approach of care (PCC). The first step to identify an appropriate strategy to implement PCC, is to gain more insight into the care experiences of these people and their informal caregivers.

Design: A phenomenological-hermeneutical philosophy is used. The study is in line with the Consolidated Criteria for Reporting Qualitative Research Guidelines (COREQ).

Method: In-depth, semi-structured interviews with people living with chronic conditions and informal caregiver dyads (PCDs) (n=16; 32 individuals) were conducted. An open-ended interview guide was used to elaborate on the PCDs' experiences regarding primary care. A purposive, maximal variation sampling was applied to recruit the participants.

Results: Based on sixteen PCDs' reflections, ten themes were identified presenting their experiences with primary care and described quality care as: 'listening and giving attention to what people with chronic conditions want, to what they strive for, and above all to promote their autonomy in a context wherein they are supported by a team of formal caregivers, family, and friends.

Conclusion: To meet the PCDs' needs, self-management should be addressed in an interprofessional environment in which the PCD is an important partner. The findings may facilitate a shift to encourage PCDs in their strengths by enabling them to share their personal goals and by working towards meaningful activities in team collaboration.

Relevance to clinical practice: Three strategies – self-management support, goal-oriented care, and interprofessional collaboration - have been suggested to improve the PCDs primary care experiences. These strategies could guide nursing practice in using more and improve high-quality of nursing care.

What does this paper contribute to the wider global clinical community?

- Primary care providers and especially nurses play a crucial role in the lives of people with chronic conditions and their informal caregivers as they support them in performing essential activities (e.g., taking medication, showering, etc.). Our findings suggest the need to reconsider the roles and responsibilities of primary care providers to encourage and also support people living with chronic conditions in performing meaningful activities (e.g., gardening, knitting).
- Care for people with chronic conditions and their informal caregivers, should pay attention to their needs, and what they strive for, and promote their autonomy in a context where they are supported by a team of formal caregivers, family, and friends. By addressing these elements, people with chronic conditions and their informal caregivers can experience high-quality care.

INTRODUCTION

As a result of the increasing number of people with chronic conditions high quality and accessible primary health care is required to improve coordination and continuity of care (1). Bodenheimer, Wagner, & Grumbach, 2002; Borgès Da Silva et al., 2018; Dessers & Vrijhoef, 2017; Epping-Jordan, Pruitt, Bengoa, & Wagner, 2004; Haggerty et al., 2008). Moreover, a person-centred care (PCC) approach is needed since each individual has different experiences towards primary healthcare (Bodenheimer et al., 2002; Wagner et al., 2005). The main objective of this study is to gaithe n in-depth insight into the daily lives of people living with chronic conditions and their informal caregivers, support they need regarding primary care, and the organization of primary care.

BACKGROUND

In Europe, more than 50 million people have multiple chronic conditions (2). In Belgium, this is estimated at one-third of the national population and is increasing each year (3). Chronic conditions, defined as conditions lasting at least one year and requiring ongoing medical attention and usually limiting daily living activities (4), are associated with higher mortality, reduced functional status, and increased rate of consultations in health care and medication use (1, 5, 6).

In 2007, the World Health Organization (WHO) formulated a response to the increasing prevalence of chronic conditions by recommending a reorganization of current healthcare systems towards a PCC approach. This approach emphasizes the needs of people with chronic conditions to be informed about their conditions and empowered in promoting and protecting their own health (7). PCC is currently considered the key concept for primary health care settings. It not only includes the person during the care process, but also guides the care providers to respect choices and autonomy of people with chronic conditions (8, 9). Therefore, PCC requires that health providers have good knowledge of their needs and preferences (8).

Scientific literature has shown the importance of being listened to, being appreciated, feeling safe, and independent (10, 11). Numerous studies have analyzed people's experiences of primary healthcare using various research methods in a variety of populations (12-14). This has led to a large heterogeneity and findings, many of which are context- and care-specific (e.g., end-of life care, self-management, treatment, involvement in shared-decision making, health outcome prioritization/ goal-setting, healthcare service delivery, and screening/ diagnostic testing) (15). To our knowledge, Kuluski et al. (2019) are the only research group who have performed qualitative research with people with multimorbidity and informal caregivers to capture their priorities more broadly, without focusing on specific issues (11).

In addition to the literature, the relevance of listening to people with chronic conditions is expressed in governmental plans, local, and worldwide. In Flanders (the Dutch speaking part of Belgium), the primary care system is currently undergoing a transition from acute to chronic care including a shift towards PCC based on the WHO global strategy (16). This shift is based on three pillars: 1) people must be empowered to participate in their care processes, 2) care delivery should be adapted to the needs of people with chronic conditions, and 3) informal caregivers are an essential pillar in the outpatient care processes, especially for vulnerable older persons (17, 18). Informal caregivers should be considered as full partners in care and should have the possibility to provide input into the care process of their relatives (16). Including the perspectives of both the people with chronic conditions and their informal caregivers could contribute to integrated care systems that enable PCC (19-21).

Although, both the literature and governmental plans describe the importance of the PCC system, the translation into practice has not yet been realized (16). To succeed in this transition, an important prerequisite is to gain more in-depth insights into care experiences of people living with chronic conditions and their informal caregivers. This applies not only to the Flemish context, but also worldwide, as primary care is undergoing a shift from acute to chronic care (16). In this shift, nurses are being given a prominent role, as they seem to be key figures in the lives of people living with chronic conditions and their informal caregivers (22). In addition, nurses are getting more and more involved in primary care (e.g., home environments, general practices) to deal with the increasing number of people with chronic diseases and support them in living autonomously for as long as possible (23). Because Flanders is currently undertaking a reorganization of primary care, this context is a relevant opportunity to expand knowledge on how people with chronic conditions and their informal caregivers experience primary care. In addition, most available Flemish studies are performed in the hospital settings instead of primary care settings (24, 25) and of the diversity of people and conditions is poorly addressed, since most studies focus on one specific disease or population (26). Therefore, our study aims to get a broad picture of primary care experiences of diverse populations of people living with chronic conditions in Flanders.

To support the shift towards PCC in Flanders, the Primary Care Academy (PCA), a consortium of four universities, six universities of applied sciences, patient representatives and White-Yellow Cross (Flemish home care organization), has been established. The PCA aims to strengthen the capacity of primary care by developing interventions, optimal roadmaps, and hands-on toolkits for primary care policies, practices, and education. The PCA adopted therefore the guidelines of the Medical Research Council (MRC) (27). The study reported here is a first step in the entire project and aims to contribute to the identification of an appropriate theory to implement PCC in the Flemish primary care context (27). The phenomenon under investigation in this study is the daily life of people living with chronic conditions and their informal caregivers, what support they need from their primary care providers, and how primary care is organized. The corresponding research question is: how do people living with chronic conditions and their informal caregivers experience primary healthcare in Flanders?

METHODOLOGY

Design

This study used a qualitative study design with a phenomenological-hermeneutical philosophy following Lindseth and Norberg (28). The combination of both epistemological backgrounds (phenomenology and hermeneutics) allowed us to examine the meaning of the experiences of people living with chronic conditions and their informal caregivers with primary care (phenomenology) as well as to interpret the transcripts describing this phenomenon (hermeneutics). In this study, the phenomenon under investigation is the daily life of people living with chronic conditions and their informal caregivers, what support they need from their primary care providers, and how primary care is organized. It responds to the ongoing transition from acute to chronic care, especially in primary care. This study complies with the Consolidated Criteria for Reporting Qualitative Research (COREQ) (Supplementary File 1) (29).

Research team

This study is conducted by a team of researchers with different professionals backgrounds: occupational therapists (DB, F, Drs; DVdV, M, PhD & PDV, F, PhD), pharmacists (MMS, M, Drs & LT, F, Drs), registered nurse (MLH, F, PhD), and gerontologist (PDV). This ensures a diverse and broad perspective when analyzing the data of PCDs.

Participants and sampling method

In total 32 individuals, comprising 16 people with chronic conditions informal caregivers dyads (PCDs), consent to participate. The informal caregivers were proxies of the people with chronic conditions and provided voluntary support by helping them with essential or meaningful activities. To recruit these PCDs, a maximal variation, purposeful sampling was used. The sampling was based on the definition of people with complex care needs operationalized by Iglesias (2018) (30). Participants were included when they met the following main criteria: a) having a single severe chronic condition or multimorbidity, b) having the support of an informal caregiver, and c) getting support from three or more primary care and welfare providers (e.g., family doctor, pharmacists, social workers, etc.). Maximum variation was sought when the participants met one of the following additional criteria: d) taking four or more different medications related to their chronic conditions, or e) having a higher need of care, or f) having a low socio-economic situation, or g) lacking health literacy, or h) showing the need for more care according to at least one member of the primary care team. Inclusion criteria were selected to recruit people with chronic conditions that could serve as exemplars due to their chronicity and the frequent and ongoing interactions they have with a range of health professionals. Participants were excluded when they were: a) under the age of 18, b) legally incapable, c) incapable to reason about care (e.g., severe mental illness, cognitive impairment), d) incapable of being interviewed for 1 hour, e) unable to provide informed consent, and f) terminally ill.

People with chronic conditions were recruited using flyers distributed via health and welfare organizations, and family doctors, the latter being the central contact point for the patients and researchers. Upon giving oral informed consent to the family doctor, people with chronic conditions indicated their main informal caregiver. All participants who were contacted were interviewed. Then, researchers contacted the person with chronic conditions or informal caregiver to introduce the study and schedule the interview. Written, informed consent was obtained before the start of the interview.

Data collection

A qualitative, semi-structured interview technique was chosen to explore the PCDs' point of view and their unique care experiences reflecting their care situation. Prior to constructing the interview guide, gaps in literature regarding primary care were identified. Thereafter, several brainstorm sessions were organized with the authors to develop this interview guide and to collect sufficient data about the care experiences, preferences, and needs of people with chronic conditions and their informal caregivers. Interviews were conducted with PCDs with the focus on the care experiences of people with chronic conditions. The informal caregiver was able to complete the answers or help to elaborate on the questions, which could possibly result in deeper insight in the care experiences, as described by Morgan et al. 2013 (31).

The semi-structured in-depth interviews started with the daily life and activities of the PCDs during the last week using the question: ‘Tell me. What did your last week look like, and ‘What did you do?’. These opening questions were followed by topics covering the care experiences of people with chronic conditions, support they receive from formal and informal caregivers, the way PCDs are involved in their care, and their care needs. By using eliciting probes, the PCDs were encouraged to elaborate and deepen their answers.

The interviews were conducted between January 2020 and August 2020; physical interviews at home environments of the person with chronic conditions, or by videocall due to COVID-19 measures imposed by the Flemish and national government. The interviews were conducted by the three principal researchers who were trained in qualitative research techniques (DB, MMS, LT). Data collection and analysis were done simultaneously to confirm or refute the preliminary findings until data saturation. This strategy allowed the identification of specific gaps for which more information was needed and to tailor the focus of the interviews with the remaining PCDs. No member check was performed, and transcripts were not returned to the participants. Before data collection and analysis, the researchers performed reflexive bracketing to decrease the influence of pre-conceived understanding. This approach reduced the risk of confirmation bias by the researchers and thus increased the neutrality (32).

Data analysis

The interviews were audio-recorded, transcribed verbatim, and combined with non-verbal observations such as emotions. No software program was used to manage the data and interviews were coded manually. Analysis according to the three-step method of Lindseth and Norberg (2004) was conducted: 1) naïve understanding, 2) structural analysis, and 3) comprehensive understanding. All steps were guided by an inductive logic. To describe the naïve understanding, the principal researchers (DB, MMS, LT) read the entire interviews and formulated an initial and personal understanding. These individual naïve understandings were discussed with the co-authors (MLH, DVdV,, PDV) and gave rise to one overall naïve understanding. Subsequently, a structural analysis was conducted for which data were broken down into meaning units and condensations resulting in themes as shown in Table 1. Meaning units were parts of transcript containing information about experiences towards primary care. The structural analysis was an iterative process containing three stages. First, one interview was analysed together by the three principal researchers to gain common insights in the data. Second, five more interviews were analysed simultaneously by two researchers to serve as validators for each other. These analyses resulted in a preliminary overview of the themes and were presented to the co-authors to serve as extra validation to increase credibility. Third, ten more interviews were conducted, analysed individually, and integrated with the first analysis. Based on these three stages, preliminary themes were presented, discussed, and reformulated in final themes by all the authors. In the last stage of the structural analysis, the themes were presented to all senior researchers of the Primary Care Academy (PCA) and discussed until consensus was reached. Finally, the comprehensive understanding was developed to create an overarching reflection of the results related to the themes of the structural analysis. All the three steps were guided by an inductive logic.

ETHICAL CONSIDERATIONS

Approval was obtained from the Ethical Committee of Antwerp University Hospital with the file number (B300201942302). The study was in accordance with the principles outlined in the Declaration of Helsinki. The participants received verbal and written information about the purpose and methods of the study. The informed consents were approved by the above- mentioned Ethical Committee. People with chronic conditions and their informal caregivers were informed that participation was voluntary, and that confidentiality would be ensured. All participants gave written informed consent in advance.

RESULTS

A total of 16 PCDs, comprising 32 individuals (16 people with chronic conditions and 16 informal caregivers) were interviewed (characteristics presented in Table 1). No participants refused to be interviewed. People with chronic conditions had a mean age of 67.5 years; of which 11 were female, and 13 were retired. For informal caregivers the mean age was 66.8 years, and 11 of the 16 PCDs were living together. Since this study is based on the shared input during the interviews from the PCDs, the results are presented as shared views and experiences. Therefore, the word ‘PCDs’ or ‘participants’ are used to emphasize that the results of both people living with chronic conditions and informal caregivers. When their views were different, this is explicitly indicated using the words ‘people with chronic conditions’ or ‘informal caregivers’.

Characteristic	Patients (N=16)	Informal caregivers (N=16)
Sex, *N*		
Female	11	9
Male	5	7
Age in years (range)	67.5 (44-89)	66.8 (45-82)
Civil registration, *N*		
Single	4	1
Married	12	15
Relationship of informal caregiver with patient (CH = cohabiting)		
Partner		10 (CH = 10)
Parent		2 (CH=1)
Child		4
Employment		
Employed	0	1
Unemployed	0	1
Unemployed due to disability	3	3
Retired	13	11
Inclusion criteria (multiple criteria possible)		
Taking four or more types of medications	11	
Having a higher need for care	6	
Having a low socio-economic situation	3	
Lacking health literacy	3	
Showing the need for more care according to at least one member of the care team	2	

Table 1. Overview of the participants' characteristics

Naïve understanding

The interviews showed that the people with chronic conditions preferred to live at home and stay engaged in meaningful activities despite their chronic conditions. Their informal caregivers confirmed these preferences. The people living with chronic conditions expressed the needs for regular support for performing meaningful and essential activities from their informal and formal caregivers. In addition to the central (in)formal caregivers, the broader social environment, such as family members and friends, played a significant role in terms of practical support and for listening. Furthermore, the narratives showed that the independence of people with chronic conditions increased by reorganizing activities and adapting them to their current capabilities with or without the use of assistive devices. Elaborating on the competences and skills of the care professional, PCDs expected a sufficient level of professional expertise of them, encompassing both practical and emotional skills. In fact, PCDs longed for more personal contact and the feeling of being heard, through open communication with formal caregivers. This open communication seemed to be facilitated when PCDs were actively involved and experienced co-determination in care-related decisions. PCDs also mentioned that (interprofessional) communication could connect different partners in their care to facilitate coordination. Finally, PCDs experienced major barriers that impede caregivers to deliver high quality of care as they face for example barriers regarding reimbursements.

STRUCTURAL ANALYSIS

The structural analysis was based on condensing the meaning units and reorganizing into themes (see Table 2 for an excerpt from an analysis) and resulted in ten themes, which are presented in Table 3 and highlighted with illustrative quotations from different PCDs interviews. Each quote indicates whether the information was from a person living with chronic conditions (P) or informal caregiver (IC) and is added with the number as indicated in the table.

Meaning unit	**Condensation**	**Themes**
"Yes, the homecare nurse is coming every week to help me shower, then she puts me in the shower."	Homecare nurse helps with showering.	Performance of essential activities supported by a team of (in)formal caregivers.
"… in the morning, I always have to wait for the homecare nurse. They come always at different times to help me dress. So, I always have to wait…"	Waiting for the homecare nurse who comes always at different times.	Care coordination as part of care continuity.
"We are knitting blankets for the children hospital… I am looking forward to Saturday… The hospital has asked to make blankets in the colors of the minions..."	Knitting blankets for the children hospital and looking forward to handing over them.	Meaningful activities to create a fulfilling life.

Table 2 Example of structural analysis of a meaning unit

1. Autonomy to be in charge of health and welfare decisions

Autonomy was expressed as a main life goal for the people with chronic conditions and their informal caregivers. They experienced autonomy as the ability to engage in activities they can carry out themselves, the ability to make their own decisions, and the freedom to go wherever they want to go. The analysis showed that PCDs strived to remain in charge of their own lives. When they felt no longer autonomous, they experienced the fear to lose individuality and their uniqueness.

1. Autonomy to be in charge of health and welfare decisions
2. Meaningful activities to create a fulfilling life
3. Performance of essential activities supported by a team of (in)formal caregivers
4. Supportive network to participate in society
5. Practical and psychosocial support to manage meaningful and essential activities
6. Balance between practical and emotional formal caregivers' skills
7. Patient-provider dialogue to achieve open communication
8. Involvement of patients to facilitate 'care decision-making'
9. Care coordination as part of care continuity
10. Barriers to provide good care

Table 3 Overview of the themes

"I have always been someone who was independent, did everything myself, never asked for help. For me, it is a huge step to ask someone, my son or family, for help [e.g., help with dressing]. Just putting my walking aid downstairs for a moment is very difficult. I feel my independence slipping away, I find it annoying. I try to do all that by myself, but then I am so tired." (*P - P14*)

While the PCDs expressed their wish to stay autonomous for as long as possible, they also feared to be placed in a nursing home. To experience a feeling of prolonged autonomy and independent life, PCDs replied within the constraints of their own possibilities to stay home, for example through acquiring assistive devices to increase mobility.

"I am afraid of going to a nursing home. You will no longer be independent. Everything is arranged for you. Goh... As long as you live at home, you can do everything you want. Sometimes we [informal care giver to partner] say to each other: 'Let's hope she [patient] doesn't have to go to a nursing home." (*IC - P4*)

2. Meaningful activities to create a fulfilling life

When PCDs were asked to define a good day, they mostly reflected upon their engagement in meaningful activities (e.g., from knitting blankets for the children's hospital to going to flea markets, etc.). These activities created fulfilment and purpose for both people with chronic conditions and their informal caregivers. The performance of meaningful activities confronted PCDs with the deterioration of the person with chronic conditions since the extent of disabilities played an important role in how these activities were done. Therefore, PCDs had to find mutual connection in their activities, and were challenged to rearrange their activities, or discover new ones.

"We are still rearranging [e.g., restructuring activities]. Now I have to cook in several times while I used to do once… I also do some woodwork for a few hours in the hobby room and do some gardening. We rearrange ourselves to the things I am still able to do." (P – P10)

It was mainly the informal caregivers who had a hard time maintaining his/ her meaningful activities because they had to spend a lot of time providing care. A variety of coping strategies were reported by the people with chronic conditions some changed their lifestyles according to their abilities and stated that this did not affect their happiness. They were grateful and are *'taking the day as it comes' (P - P6)*. These PCDs showed a positive outlook and realistic vision on the future.

"I'm actually someone who always looks for the positive in the negative. For example, I say: 'now I have the chance to see the sun going down'. Instead of earlier, while I used to be working or helping at home. Now this is no longer possible." (P – P6)

Others experienced feelings of dejection, losing interest in activities and expressed that they *"had nothing to strive for anymore" (P- P5).* These people with chronic conditions longed nostalgically for old times and regretted that they were not able to perform the activities they used to perform earlier.

"My mood…is not to talk about. How do I have to call it... Close to depression. I fight against it. I said to myself 'there are people who are worse off'. Then I start thinking what could be worse... Right? It is not fun. I am... sad..." (P– P5)

3. <u>Performance of essential activities supported by a team of (in)formal caregivers</u>

In addition to meaningful activities, PCDs also expressed they had to perform essential activities to make it through the day. Essential activities included showering and dressing, but also, for example, going to the physiotherapist and pain clinic.
Some people with chronic conditions were able to perform these essential activities autonomously, others needed support from their informal caregiver who was seen as indispensable to cope with their situation in various ways. Informal caregivers offered practical (e.g., household chores) as well as psychosocial support (e.g., offering a listening ear) but also tried to entertain the ones who they cared for by taking them out and going on excursions together. For these reasons, informal caregivers were described as *"key figures" (P - P2)*.

"Concerning showering. Since her fall, she [p] never takes a shower by herself anymore and has to use a chair. And if she had to bend down to wash herself I [IC] stood behind her and held her like this [places her hands in her side]." (IC – P2)

Although informal caregivers "*did their utmost" (IC - P2)*, support from formal caregivers (e.g., physiotherapist, home nurse, general practitioner) remained inevitable. They offer not only medical support, but also give advice and education (e.g., how to increase mobility). Formal caregivers supported people with chronic conditions with essential activities (e.g., dressing). With some, PCDs had bonded over the years, resulting in a strong connection. According to the PCDs, the good formal caregivers aimed to assist PCDs to live their lives to the fullest and as autonomously as possible. With the help of formal caregivers in essential activities, people with chronic conditions could use their energy more efficiently to perform meaningful activities.

4. <u>Practical and psychosocial support to manage meaningful and essential activities</u>

An important role emerged for practical and psychosocial support. Practical support was often related to assistive devices (e.g., a walking aid, a wheelchair, handles in the bathroom, and a stair lift). For PCDs, those devices were considered essential in remaining independent in their daily activities. In some cases, greater adjustments, such as home-modifications, were essential to allow people with chronic conditions to continue living in their own houses. For this reason, modifications were positively received, but required financial resources or homeowners willing to make the necessary changes.

"The homeowner has installed a walk-in shower, so I don't have to climb [over the bathtub which was removed] over and we have also installed a sauna [for the pain]. I think that is fantastic...I go in there once or twice a week." (P – P11)

PCDs expressed that psychosocial support, for example finding distractions in shared leisure activities was equally important as practical support. Some PCDs found also support in talking with peers through which *"they found an equal (Patient - P4)".* Peers listened based on their own expertise or were "*companions (P4)"* to undertake activities to forget about worries. In contrast, other PCDs found contact with peers conflictive, because they were faced with their own functional deterioration compared to the observed better functioning of these peers.

"I have a good contact with a fellow MS [Multiple Sclerosis] patient, who is worse off than me. Sometimes I invite her to come over and relax in the garden. We are both interested in culture. We exchange experiences, things we've been through [e.g., visit to a museum] …We don't talk about our disease." (P - P9)

Another aspect raised by the participants was digital tools for the treatment and control of chronic conditions that have changed a lot. The use of applications, Internet, and social media offered support. However, they often doubted the reliability of the outcomes. Therefore, this innovative support was experienced by the participants as novel, but not providing yet enough trust to consider reliable.

5. <u>Supportive network to participate in society</u>

The social environment of PCDs varied from family members and friends to neighbors. Yet others had limited social contacts and had to rely mainly on themselves. The way this social environment was organized determined the amount of support PCDs received.

"They all [family e.g., children] live nearby. Yes, otherwise I wouldn't be able to live here, if they would live further away [family is helping her with daily activities]. I would enjoy staying here until I die. In my small house…" (P – P4)

The proximity of family members, in which the PCDs put trust, resulted for them in a sense of stability and the possibility to live as autonomous as possible. However, the impact was strongly dependent on the availability, the work-life balance, the financial situation, and the health condition of their family members.

"Because my sister has her own family, she must take care of her household and her work, she can't take care of me on her own. That's a bit disappointing… I've already discussed with my mother…when I will be alone later that I would like to have someone to support me in cooking..." (P – P7)

The social environment had a positive impact on the situation of the people with chronic conditions but some PCDs also faced a decrease in social contacts as the functional capabilities decreased. In addition, PCDs experienced a feeling of being excluded from society due to external reasons e.g., inaccessible public places, family and friends who do not have the opportunity to invite PCDs for a visit because their house is not accessible. These external factors hampered PCDs to spontaneously interact with others and to go wherever they want to go, reflecting a lack of autonomy. Also, not every PCD could rely on a supportive network and expressed to "*living on an island (IC - P13)"* hampering the management of meaningful and essential activities.

6. <u>Combination of emotional support and practical skills to fulfill the needs of people with chronic conditions</u>

Previous themes illustrated the need for PCDs to be supported by formal caregivers in essential activities. However, in addition to the need for practical information, PCDs required emotional support from formal caregivers. They expressed the need for balance between practical and emotional caregivers' skills. From the narrative analysis, practical skills could be described as having theoretical knowledge and skills to provide the appropriate and technical treatment, expressed by PCDs as *"formal caregivers have to do their job." (Patient - P15).* Whereas emotional skills gave PCDs the feeling of being heard and treated as a person 'who has an illness' instead of 'who is the illness'.

"The most important thing is to build a relationship of trust. This isn't possible if there is no understanding or empathy from the caregiver to the person with chronic conditions …Authenticity…That a caregiver also shows a piece of himself, also show that he is human. Professionalism and knowledge are also extremely important and that is where I set a high standard, the importance of education and continuing learning." (IC – P12)

When reflecting on the emotional support, PCDs expected their formal caregivers to ask adequate questions, have a level of increased empathy, be authentic as a person, and pay attention to the person as a whole. Formal caregivers should also be able to "*intuit the needs of people with chronic conditions" (P- P14)",* to *"discover their unexpressed needs" (P - P14)*, and to adapt their treatment approach to the personality of the person with chronic conditions. When PCDs experienced a lack of empathy they tended to change to another formal caregiver.

7. Dialogue between people with chronic conditions and providers to achieve open communication

"Communication goes both ways (IC - P15)" reflects the need for a dialogue between the PCDs and their formal caregivers. People with chronic conditions experienced that they want to share their story; formal caregivers in turn must provide the right context for them to share their concerns. For this, trust was of utmost importance. PCDs gained trust when time was offered, when there was a longstanding relationship with the formal caregiver, or when they gained a second opinion to confirm a previous diagnosis.

"It is not that familiar as in e.g., the rehabilitation center … You miss tenderness. In the rehab center they take time to talk about how you feel and what you want to do. I think that is important. They provide time and space to you share our problems." (P – P16)

Open communication was also improved when adequate information was offered, expressing honesty about the diagnosis, treatment options, treatment method, and medication regime. In the following quote, a person with chronic conditions reflected on a situation when she did not receive adequate information to share her own diagnosis with her family.

"How was I supposed to tell my husband and my children [just after receiving the diagnosis of MS]? The doctor said: 'there is Internet and a library Miss.' So, I started looking on the Internet." (P – P6)

In addition, the physical context in which the communication occurs must allow and facilitate open and personal communication (e.g., using a laptop to take notes was indicated as a main obstacle hampering a trustfulness open conversation).

8. Involvement to facilitate 'care decision-making'

People with chronic conditions expressed the wish to be involved in their care processes, for example by participating in the search for the best treatment. Involvement gave them a sense of safety that made them feel respected and gave assurance that the treatment was for their own good, which in turn increased the adherence. As a result, trust towards their informal caregiver and their decision-making was facilitated.

"I am someone who enters a discussion with the medical doctor about my health… with my family doctor and my neurologist. I want to hear the various options which I will go for." (P – P6)

Participants were convinced that active involvement in their care process created different prescribing by the caregiver.

"If I go to the family doctor, he asks whether we would try this medication, or we prefer something else. So yes, I'm involved in the decisions." (P – P3)

9. Care coordination as part of care continuity

Participants received support from a broad range of providers to handle their conditions. It was important for them that those formal caregivers worked together and communicate with each other. This means that care must be "*well-coordinated (IC - P8)"*.

Coordination was also mentioned as essential to ensure care continuity. This included communication among (in)formal caregivers and people with chronic conditions. PCDs preferred interaction with the entire team that contributed to better care and a more personal approach. Also, care coordination was mentioned in the context of the follow-up of previous diagnostical tests. Nowadays, "*it is all in the computer (IC - P2)"* and facilitated by electronic and shared patients' records.

"Caregivers must dare to broaden their view and look beyond their own discipline. They must open up to have contact with other caregivers, so they become one. In that case, the person with chronic conditions would be supported by a network of caregivers." (P – P12)

Although participants expressed the need for coordinated care, they experienced a lack of coordination and communication among professionals from different organizations and levels. For example, they experienced too little communication from the hospital towards the family doctor when someone was discharged. People living with chronic conditions desired better follow-up, especially from their family doctor, who should be aware of recent events that they experienced. The PCDs suggested a home visit from their family doctor immediately after being discharged from the hospital as a possible way to guarantee a better follow-up.

“And the family doctor comes on a home visit. He said to her: ‘see you in 4 - 6 weeks’. How is this possible?!? She [P] just left the hospital, with all her worries and he said, till 4-6 weeks! …. Someone should, after leaving the hospital with a severe disease or so, warn the family doctor. Now you have to call him [FD] yourself which can takes 2-3 weeks.” (IC - P3)

In addition to better follow-up, PCDs needed structure and certainty from their formal caregivers. In the case of home nurses, people with chronic conditions preferred the same nurse on the same hour to help them with their morning routines. This contributed to personal contact and trust bonding between the patient and the home nurse because they were continuously building on a sustainable relationship.

10. Barriers to provide quality care

Administrative procedures (e.g., application for refunds) were expressed as the main barrier to quality care. For example, PCDs got bogged down in bureaucracy when they applied for reimbursements of assistive devices. The use of applications took too much time and effort and were often too complex to understand resulting in inconsistent information to make the right decisions.

“Why should I prove that I have disabilities? It was not my first application. They [insurance company] do not realize that my condition is progressive. It was only after the renovation of our bathroom that they [insurance company] asked for a proof of invalidity…I got negative response…Then I had to defend myself and all they asked was why I have chosen a specific system…Now I am already waiting for nine months for an electric wheelchair…It always take so long…” (P – P15)

The struggle with administrative procedures led to sadness and frustration on top of the negative feelings some PCDs already experienced as a result of having the chronic condition.

PCDs also experienced difficulties in finding leisure activities, contact with peers, or finding advice for modifications to their house and transport. PCDs felt on their own in finding their way through procedures and expressed this as “*a full-time job (IC - P15)*”. If support was provided, PCDs could focus on activities that give purpose to life.

Comprehensive understanding

The naïve understanding and the identified themes from the structural analysis were re-read as a whole to see how they interrelated and to formulate a comprehensive understanding. By doing so, patterns between the themes and thus the lived experiences of people living with chronic conditions regarding there care situation were articulated. This allowed us to visualize the associations among the different themes, illustrated in Figure 1.

When someone is diagnosed with a chronic disease, this illness does not stop the person from being an individual human and having needs and preferences. PCDs expressed that it is of paramount importance that health care providers are capable to go beyond the level of purely functional and essential activities (e.g., washing, bathing, and clothing) to the level of meaningful activities and encounters. Although essential activities were necessary to get through the day – and for some it can even mean the beginning of their day – it was very important to find meaning in several ways: meaning in activities one performs, meaning in one’s relationships with family and friends, but also meaning in the relationship with one’s caregivers, and finally meaning in life. The search for meaning determined how people with chronic conditions interacted and coped with their conditions; a constant balance between what was strictly necessary on the one hand and what gave satisfaction and meaning in life on the other. The latter led to a satisfying care process that emphasizes the diagnosis and treatment adding that extra level of being treated as a person. Reading the person and being able to ask the unasked question to discover the unexpressed needs of people with chronic conditions, determined a ‘quality caregiver’.

PCDs expected formal caregivers to change how they delivered care and required that they look beyond their professional perspective of logical care solutions and assumptions. They should acquire skills to intuit the needs of people with chronic conditions. This intuitive ‘reading’ made these people feeling seen, heard, and committed in their care process. Quality care was described by the PCDs as listening and giving attention to what they want, to what they strive for, and above all to promote their autonomy in a context wherein they are supported by a team of formal caregivers, family, and friends. These elements could be found in care that starts from personal and meaningful goals in which care was delivered based on the needs and preferences of people living with chronic conditions and informal caregivers, while supporting their self-management, as prioritized goals, and encouraging them to live their life regardless their chronic conditions. Citing the PCDs, this could only be reached in a strong interprofessional collaboration in which the team worked together – among each other and with the PCDs- to that what was important to them.

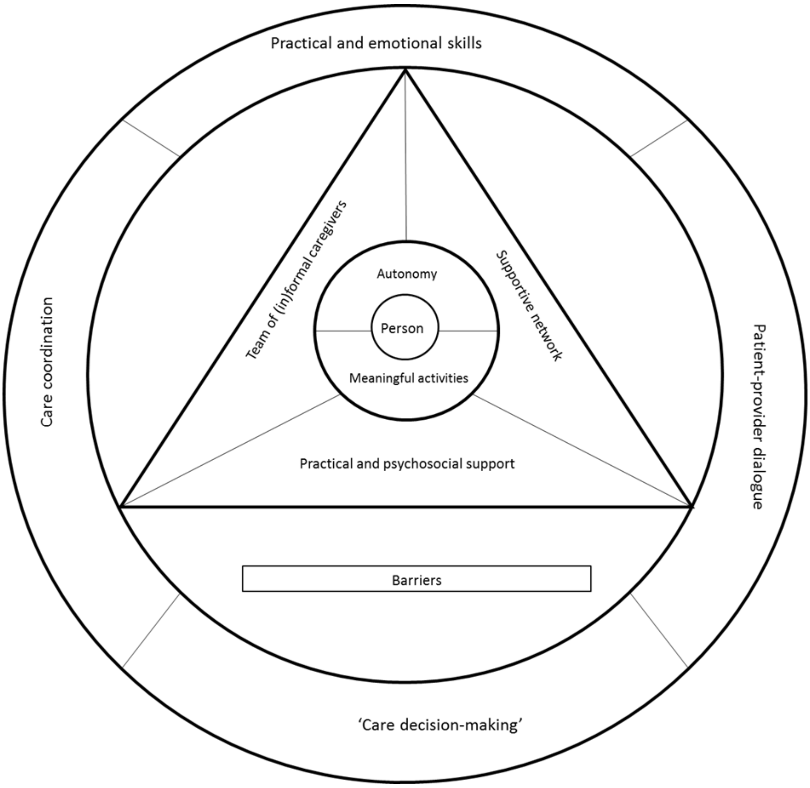

Figure 1: Schematic representation of the themes

DISCUSSION

This study provides a broad picture about the daily life of people living with chronic conditions and their informal caregivers, what support they need from primary care providers, and how primary care is organized.

PCDs reflected on the importance of being autonomous, demonstrated by performing meaningful and essential activities. Therefore, PCDs needed support from a social environment of family and friends, formal caregivers, and in some cases assistive devices. Throughout these activities and relationships, their personal values should be mirrored. Consequently, PCDs expected to be treated as an equal partner that includes open communication. All this should take place in a context where collaboration among the PCDs and formal caregivers was facilitated. According to the PCDs, quality care was described as: '*listening and giving attention to what the people with chronic conditions want, to what they strive for, and above all to promote their autonomy in a context wherein they are supported by a team of formal caregivers, family, and friends.*

These findings confirm other recent studies exploring the needs and preferences of people with chronic conditions. This is not surprising as the aim of this study was to start 'tabula rasa' and truly explore the experiences from the PCDs themselves.

Common themes seem to be the need for person-centred open communication (33-38), involvement in the care process (34, 35), a supportive network (39), and adequate multidisciplinary coordination (40). Despite similarities in results, these studies were slightly different since previous studies have focused on the experiences of people with chronic conditions and not of PCDs. However, informal caregivers should be considered as full partners in care and their presence could improve the research process for people with chronic conditions who lack communication skills (1, 41-44). Based on our observations, the presence of informal caregivers allowed people with chronic conditions to elaborate more on their care experiences, because they felt supported, which allowed us to gain more insight.

While most of the studies focused on specific components of care (e.g., collaboration, communication), we addressed the large majority of health and social needs of people with chronic conditions from a wide range of chronic conditions (45, 46). This was done intentionally to recruit participants with diverse health profiles resulting in contrasting cases. As far as we know, only a few studies such as Lim et al. (2017) have included broad study populations and their needs. Lim et al. (2017) performed interviews with people suffering from multiple chronic conditions and defined six domains essential for well-being and health (principles, relationships, emotions, activities, abilities, and possessions). Their findings are similar to our ten themes and also emphasize the importance of activities (e.g., reading, gardening, and self-care) and having significant connections with others (e.g., family, friends, and the community) (47).

Our findings show that PCDs want to engage in meaningful activities, going beyond what they call essential activities, to create fulfilment and purpose in life. Each "*individual needs to have the opportunity to engage in activities that foster meaning and satisfaction, the so-called 'occupational well-being'" (48)*. Engaging in meaningful activities enables quality of life and - even more - impacts morbidity and mortality (49). In other words, it is important that the care process pay attention to meaningful activities and not only to essential activities (50). To create purpose in life, autonomy appeared to be an important requirement. More specifically, PCDs expressed the wish to stay autonomous by making shared decisions in which they take responsibility and experience freedom by choosing where they want to go. This shared decision-making throughout care delivery is one of the activities of a person-centred process of care and could be facilitated by nurses, among others (51). These findings also correspond to the multiple aspects of autonomy Basset and colleagues described such as having freedom of choice, taking responsibility, retaining independence in daily activities, and living independently (52). The feeling of autonomy could also be fostered by having agency over activities, and from a broader perspective over health and chronic conditions. This means that individuals should experience a sense of control over what, when, and how to engage in activities, including care activities (48, 53).

PCDs found control in surrounding themselves by a broad supportive network, such as the formal caregivers and their social environment of family and friends. To keep up in their environments and to participate in society, they relied on practical support (e.g., assistive devices). In addition to using practical support, they received psychosocial support from peers who listened and made them feel safer and less lonely. These findings are in line with the literature which indicates that the presence of these networks has a positive influence on personal welfare status (e.g. loneliness) (54, 55). Our research shows that psychosocial support is necessary to remain independent in daily living. PCDs tried to reorganize their lives and reinvent themselves by making use of their remaining capabilities, for example, by searching for activities they are still able to perform. People with chronic conditions adapt their activities to compensate their limitations and changed behaviors caused by their conditions (56, 57). In our study, we found that PCDs also tried to maintain, change, or create new meaningful behaviors in activities and life roles. Based on this reasoning, PCDs could engage in role-management (58). This approach corresponds with the SOC-model (selection, optimization, and compensation) of Baltes (59), wherein ageing people carefully select activities they still can perform. Throughout these meaningful activities and relationships with formal caregivers, we found that it is important that the PCDs' personality and authenticity is mirrored. Therefore, personal values of people with chronic conditions should be highlighted in developing, sharing, and follow-up in the care plan (60). This can be achieved by approaching PCDs as equal partners in care, although this is often hampered by a lack of time, among other factors, during visits with the caregiver (33, 40). Being treated as a whole person, is beneficial for people with chronic conditions. It can increase their satisfaction, enhance the relationship with their providers, and lead to better understanding and more knowledge regarding their own health (61, 62).

To be treated as a person, people with chronic conditions expressed the need for balance between practical and emotional caregivers' skills. To meet their needs and preferences providers should have a level of empathy and pay attention to the whole person (51). PCDs want to share their story with their formal caregivers. Gaining trust is a key achievement to perform communication between people with chronic conditions and providers. In addition, the ability to be able "*to intuit their needs*" and to recognize what they feel was indicated as an important skill, which can only be applied if an open communication between them and the provider is achieved. These findings correspond with findings from literature where communication skills and especially *"empathy"* are considered as the most important skills that caregivers should master to perform 'quality care' (51). Being in empathetic contexts allows people with chronic conditions to feel safer and to express their thoughts and problems that concern them (63). In addition, Franklin et al. (2019) showed that the caregivers' communication style is important to collaborate and negotiate on what people with chronic conditions prioritize (64). Formal caregivers are not exclusively communicating with the PCDs, but they constantly communicate with multiple other (in)formal caregivers. A recent editorial briefing by Kuluski explores these communication and relationships themes, identifying them as the core components of PCC (65). When reflecting on formal relationships, people with chronic conditions indicated that they receive support from a broad range of providers to handle their conditions. They want well-coordinated care, which is essential to ensure continuity of care. They also often experience a lack of coordination and communication among professionals working in primary care and hospitals. They require better follow-up after being discharged from the hospital, (66, 67). The importance of the care environment to deliver PCC was also described by McComarck (2004), who indicates that the environment has a major impact on the operationalization of PCC and has the greatest potential to limit or facilitate PCC (68). Interprofessional collaboration facilitates the integration of health workers and allows them to engage any individual whose skills can help achieve local health goals (69). To do so, health professionals need a shared vision and goals (70) and can be enhanced by using a PCC approach (18, 71).

Strengths and limitations

This study has several limitations. Firstly, by sampling mostly older and retired participants with certain functional limitations, our results could not be generalized to the entire population and cannot be transferred to other populations and contexts beyond this specific group we interviewed and met the inclusion criteria (e.g., working population or people with chronic conditions transitioning to the labor market). However, this sample could be considered as a clinical representative sample in the primary care context of Flanders, where most people with chronic conditions are elderly people (3). Notwithstanding it might be interesting to include more participants to capture the experiences of other ages, cultures, etc.

Secondly, there are limitations with the data collection. Due to the covid-19 pandemic, we had to switch to video interviews which changed the context and created consequences (e.g. less non-verbal observations, lack of concentration) (72, 73). Furthermore, the performance of PCDs interviews could have inhibited people with chronic conditions to share information that they would not want their informal caregiver to know. This limitation was addressed by giving people with chronic conditions the freedom to indicate their informal caregiver by which they felt most comfortable. The strategy of PCDs interviews also enabled us to improve the fluency of the interview for people with chronic conditions who lack communication skills. Through the open nature of the interview questions, PCDs were enabled to reflect not only on their care experiences, but also on their daily life with a chronic condition. Furthermore, interviews were conducted by the three first authors, all of whom are experienced in qualitative interviewing people with chronic conditions. No member check was performed, and transcripts were not returned to the participants. However, data collection continued until saturation was reached; in the last interviews, no new information for the themes appeared (42, 74).

It is common in qualitative research that the presence of a researcher influences the interpretation of the data. This risk of bias was minimized by triangulating researchers from different backgrounds (e.g., occupational therapists, pharmacists, nurses, gerontologists) and by conducting and analysing interviews together in team of at least two researchers. This triangulation and intensive cooperation increased credibility and reduced the risk of bias to interpret the data based on pre-conceived understanding and personal opinions. Furthermore, the findings were debriefed in an iterative process, increasing the reflexivity and critical awareness for members of the consortium, which included a broad range of healthcare professionals. In the first stage, the three principal researchers (DB, MMS, LT) analysed the interviews separately, afterwards they compared their findings. In a second stage, these preliminary results were presented and discussed with the co-authors (MLH, DVdV, PDV) until consensus was reached. In a third stage, the findings were presented to other senior researchers of the PCA consortium and then the process began again if no consensus was reached. This stepwise approach decreased the risk of confirmation bias.

Relevance for clinical practice

Primary care providers and especially nurses play a crucial role in the PCDs' lives as they support performing essential activities (e.g., taking medication, showering, etc.). Our findings suggest reconsidering nurses´ roles and responsibilities to encourage and also support people living with chronic conditions in performing meaningful activities (e.g., gardening, knitting). From an academic point of view, the shift towards the support of people with chronic conditions while considering their strengths, listening to their goals, and collaboration with the entire team is already being made (75). To support among others nurses in further implementation of this shift into practice, possible strategies could include (1) a focus on self-management support to achieve an autonomous life (76, 77), (2) care processes with a focus on personal and meaningful life goals of people with chronic conditions (78), and (3) interprofessional collaboration including the individual as a partner to ensure care continuity (79).

CONCLUSION

For people living with chronic conditions and their informal caregivers, it is important to be supported in their autonomy enabling them to engage in activities, both meaningful and essential. They should be supported in their self-management to deal with the consequences of chronic conditions. To meet these needs and to enable self-management at its fullest, care should be tailored to the individual with a focus on personal and meaningful life goals. Care should be organized in a context of interprofessional collaboration in which the person with chronic conditions should be considered as an important partner and a whole person. This entails paying attention to what the person with chronic conditions wants, to what they strive for, and to promoting their autonomy in a context wherein they are supported by a team of formal caregivers, family and friends. Only then we are moving towards the translation of the basic PCC principles into practice.

SUPPLEMENTARY FILE 1: THE CONSOLIDATED CRITERIA FOR REPORTING QUALITATIVE RESEARCH (COREQ)

Acknowledgments

We want to thank all the participants, patients, and informal caregivers to share their experiences towards primary care. Especially we want to thank Roy Remmen as chair of the Primary Care Academy for his contribution and support during this study. Finally, we want to thank the King Baudouin Foundation, Fund Dr. Daniël De Coninck for funding this project.

Conflict of interest

The authors declare that they have no conflicting interests.

Author contributions

The manuscript has been read and approved by all the authors. DB, MMS, LOT, MLH, DVdV and PDV contributed to the conceptualisation and the methodology of this study. DB, MMS and LT acquired the data and conducted the interviews. DB, MMS and LT analysed the data and wrote the manuscript. MLH, DVdV and PDV contributed to the interpretation of the data and critically revised the manuscript several times.

Ethics approval

Approval was obtained from the Ethical Committee of University of Antwerp (B300201942302).

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Chapter 4: Assessing the level of competence of Flemish primary care professionals regarding bio-psycho-social working, self-management support, and interprofessional collaboration. A cross-sectional survey.

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Submitted and under review at The International Journal of Integrated Care, 2023
A1 journal, Q2, IF: 2.913

Chapter 4 represents the third data source (care providers) of the exploratory phase. In this chapter, the competences and skills of care providers were assessed regarding interprofessional collaboration, self-management, and bio-psychosocial working. We decided to conduct a cross-sectional survey and included all types of primary care professionals working in Flanders. The results of this study provided us with insights into the strengths and weaknesses of care providers concerning the three concepts. Using this information, we were able to pinpoint the key areas during the development phase in Chapter 6, ensuring that the IPCI toolkit aligns with the needs of Flemish care providers.

ABSTRACT

BACKGROUND: Integrated care is proposed to meet the needs and preferences of all primary care actors. Meanwhile, a transition towards integrated care is experienced as highly complex and challenging. This study determines the demographics and compares caregivers' competences regarding integrated care.

METHODS: We surveyed caregivers in Flanders using three validated scales measuring bio-psycho-social-working, self-management, and interprofessional collaboration. The descriptive statistics on sociodemographics were computed, and bivariate-analysis through between-group differences in the instruments were evaluated by ANOVA-tests.

RESULTS: In total, 591 caregivers participated in this cross-sectional survey. For bio-psycho-social-working, medical professionals scored significantly better than the remaining groups, except for networking. Caregivers working in solo-practices and self-employed caregivers scored significantly better for networking than caregivers from multidisciplinary settings and salaried employers. For self-management, medical professionals scored significantly better for all subscales. Regarding interprofessional collaboration, self-employed caregivers scored significantly better than salaried employers for partnership and coordination.

DISCUSSION: In comparison with other studies, our participants scored highly on the subscales relating to coordination and assessment, which are important for care continuation and integrated care.

CONCLUSION: We see significant differences between various groups of caregivers, and we notice that our participants scored high for coordination. Further research is needed to develop interventions to improve competences of caregivers.

Keywords: Integrated care, interprofessional collaboration, bio-psycho-social working, self-management, primary care

INTRODUCTION

In Flanders, there is an increase in the number of chronic patients, which is mainly due to the ageing population. About one-third of the adult population has one or more chronic diseases driving them to adapt their lives to the limitations that are attached to them.[1] This increase in the number of chronic diseases causes several problems such as an increased workload of healthcare providers, and increased healthcare costs.[2] On top of that, it becomes harder to manage the care around chronic patients, since their needs and preferences are more complex and therefor implicit a different way of working by primary care professionals.[3] To establish an integrated care, clarify the complex structure of primary care and enable interventions and improvements, in 2020 the Flemish Government decided to make the shift from residential/hospital care towards more PC and therefore Flanders has been divided into 60 primary care zones (PC zones) in order to better coordinate the work of local authorities, caregivers and social workers and create strong, accessible, effective and patient-centred PC. A primary care zone (PC zone) is a geographically delimited area, formed by one or more municipalities; and governed by a healthcare council. Each of these councils have their own priority tasks, based on local needs.[4] Although there is some improvement, it seems that there is still a long way to go before integrated care can be achieved. In addition, it has been never tested if current primary care providers are even able to reach so.

Integrated care is proposed as a solution to meet the needs and preferences of all PC actors.[5] According to Goodwin et al., integrated care is an approach to overcome care fragmentations, especially where this is leading to an adverse impact on people’s care experiences and care outcomes.[6] Brown et al. indicates that a well-coordinated cooperation between care providers lies at the heart of integrated care.[7] In addition, Leutz et al. defined it as the search to connect the healthcare system (acute or PC) with other human service systems (e.g., long-term care, education and vocational and housing services) to improve clinical and non-clinical outcomes such as patient satisfaction and efficiency.[8] Valentijn et al. distinguished between several dimensions of integrated care, which are structured around the three levels. At the macro level (system integration), integration enhances efficiency, quality of care, quality of life and consumer satisfaction. At the meso-level (organisational and professional integration), integration enhances the collective action of organisations across the entire care continuum and partnerships between the professionals both within (intra) and between (inter) organisations. At the micro level (clinical integration), integration enhances the coherence in the primary process of care delivery to individual patients. Finally, functional and normative integration ensure connectivity between the levels.[9]

Efforts are being made to put the patient at the centre, using a patient-centred care approach.[10] In order to achieve integrated care and enhance a patient-centred care approach, PC professionals have adapted themselves and their practices over the past decades.[11] Acknowledging that they cannot keep up with chronic patients' needs on their own, work-life balance, and the increase of female medical doctors, many of the solo practices have taken the step to group practices.[12] Furthermore, the group practices noticed that adding and integrating different professions in one practice brings lots of advantages to providing 'good care'.[11] However, both mono- and multidisciplinary group practices have made inroads in the recent period.[13] Regarding the payment system, most primary care professionals work in a fee-for-service payment system, in which caregivers can work as salaried or self-employed professionals.[14] Though, especially multidisciplinary practices started to use a mix of different payment systems such as fee for service (FFS) and capitation system. In the capitation system, the National Institute of Health and Disability Insurance pays fixed amounts to PC professionals for a bundle of services a patient is expected to need during a period of time.[15-18] In addition, although working under one roof with other healthcare providers has many benefits, this new way of working can bring new problems such as uncertainty of the team's position in the overall service, caseload, poor coordination between team members, and uneven work distribution.[13, 19] Problems that an old-fashioned solo practice did not face before, have become daily occurrence in group practices.[20, 21] Even though there is no strong evidence on the relationship between payment systems and interprofessional collaboration of health care providers, Gilles et al. indicated that healthcare providers feel more motivated to cooperate if there are less financial barriers.[22] In this way, they might spend more time to perform team meetings and do not feel any tension about loss of income.

Interprofessional collaboration occurs when two or more professions work together to achieve common objectives.[23] This encompasses establishing a collaborative partnership between a group of healthcare professionals and a client, wherein they engage in a participatory, coordinated, and collaborative approach to make shared decisions concerning health and social matters.[24] Moreover, Goodwin et al. and Lewis et al. suggest that an efficient interprofessional collaboration is a prerequisite to establish integrated care.[25, 26]

A facilitator for both interprofessional collaboration and integration is the bio-psycho-social framework, which can be used to provide care for chronic patients.[27] It is an integrated approach for health and diseases, and the competences needed for bio-psycho-social working are strongly related to interprofessional collaboration and integrated care.[28-30] A bio-psycho-social model takes into account the biological (the relationship of disease and bodily health), psychological (aspects of mental and emotional wellness that also relate to behaviour), and social (social interactions and community activities) aspects of human functioning and recognises the complex interplay between those elements.[31] By using this framework, caregivers can more easily take into account the preferences and needs of the patients when providing care. In addition, this is a sustainable working model, as it also takes into account the collaboration and relations between caregivers.[32-34] Linked to the bio-psycho-social working model, work is also done to increase the patient's self-reliance, which can be particularly problematic with older chronic patients. To improve this, self-management support is a relevant concept, and is considered as an important component of integrated care.[35, 36] Self-management means dealing with challenges faced by individuals with chronic conditions, consisting of medical management, role management and emotional management of their conditions.[37, 38] Health professionals and systems need to support self-management into an integrated system of chronic illness care. This can increase the capacity of the patients and subsequently provide them the necessary knowledge and skills to manage their conditions better.[39]

Although many changes were achieved regarding integrated care, patients, healthcare providers, policy makers and academics are still looking for innovative strategies to improve healthcare delivery towards more integrated care for citizens with chronic conditions and multimorbidity. On the one hand, there is a lack of studies on the necessary competences for integrated care, which include bio-psychosocial work, self-management and interprofessional collaboration. On the other hand, existing studies are mostly conducted in one type of setting in a limited group of healthcare providers, with a limited distinguishing between the different demographic groups, type of settings, payment systems and professional backgrounds.[40-44]

In this study, we want to determine the demographics and assess the competences of PC professionals working in PC in terms of bio-psycho-social working, self-management support, and interprofessional collaboration. Furthermore, we will try to find significant differences between the various groups of caregivers. By combining three measurement instruments, we can obtain a broad insight into today’s Flemish PC.

METHODS

Study design

This study used a cross-sectional survey design and was performed on PC professionals in Flanders, Belgium as part of the research project conducted by the 'Primary Care Academy' (PCA). The PCA is a network for research and education aimed at PC in Flanders and Brussels, consisting of 4 Universities and 6 Universities of Applied Sciences together with a home care organisation (the White Yellow Cross) and the Flemish Patient Representative Organisation.

Data collection

In this cross-sectional survey, three validated and reliable scales were used to collect data: (1) the bio-psycho-social scale (BPSS), (2) the self-efficacy and performance in self-management support (SEPSS) instrument and (3) the assessment of interprofessional collaboration scale (AITCS). For AITCS, to meet our research needs, we have chosen to collect only data from participants working in a monodisciplinary or multidisciplinary team. This means that the care providers who do not work in a team were not included and were not able to fill in this scale. In addition, data were collected about demographics.

After piloting in May 2020, an online questionnaire in Dutch using Lime software was sent out in two waves between June and September 2020. Note that this was in the COVID-19 pandemic, thus at the beginning of the survey, participants were asked to complete the survey thinking back on their conditions before the COVID-19 pandemic.

Participants were recruited (i) through advertising on social media (Linked in®, Twitter®, Facebook®), (ii) the website and the contact list of the PCA, (iii) by actively contacting caregivers, care organisations and institutions, so that they could spread the survey by emailing their members and placing announcements on their websites, and in their newsletters. In particular, we contacted the 60 PC zones in Flanders. We monitored the recruitment process to be able to include underrepresented professionals active in the PC sector. In order to be eligible, study participants had to meet the following criteria: (i) being (self) employed in one (or more) of the 60 Flemish PC zones, ii) being 18 years or above, (iii) accepting to answer the study questionnaire, (iv) being able to read and understand Dutch.

Measures

The BPSS is a psychometrically reliable and valid instrument specifically designed to measure the bio-psycho-social attitudes of health care professionals. The instrument consists of 29 items, rated on a 5-point scale from "*strongly disagree*" to "*strongly* *agree.* The instrument comprises five subscales and evaluates whether the healthcare workers: (i) work interdisciplinary and exchange information in and outside the organization (subscale is called networking), (ii) use client's expertise, considering him as the central point around which the therapy/care-plan evolves (subscale 2: using clients expertise), (iii) able to explore the patients' goals, to assess all aspects of human functioning and report accordingly (subscale 3: assessment and reporting), (iv) having the necessary knowledge of guidelines, tools and skills to communicate (subscale 4: professional knowledge and skills) and finally (v) involving the context of the client (subscale 5: using the environment). The internal consistency (Cronbach's α) of the subscales ranged from 0.75 to 0.82.[31]

The SEPSS is a 36-item scale, consisting of six subscales (assess, advise, agree, assist, arrange, and overall competences). Self-efficacy in self-management support is rated as; 'I think I can do this': Not at all, Not sufficient, More or less, Sufficient, Good. Performance in self-management is rated as; 'I do this': Never, Rarely, Occasionally, Frequently, Always. The Cronbach's alpha was 0.96 for the total self-efficacy scale.[45]

The AITCS is designed as a diagnostic instrument to evaluate the level of interprofessional collaboration among a variety of health care teams. This 23-item self-report instrument consists of three subscales; partnership (8 items), cooperation (8 items), and coordination (7 items). Each item is rated on a 5-point Likert scale from 1 = strongly disagree to 5 = strongly agree. The internal consistency of the AITCS-II maintains reliability with an overall Cronbach coefficient reported across the scale of 0.89 (subscales ranged from 0.90 to 0.92).[46]

In addition to these assessments, the survey also collected information regarding professionals' sociodemographic and work characteristics, including age, sex, years of experience, payment system, and type of work setting. Years of experience were grouped as follows: 0-5 years, 5-10 years, 10-20 years, and 20+ years. The PC professions were divided in four groups: the medical group (MG) including general practitioners, pharmacists, and dentists; the care and cure group (CCG) including nurses, dietitians, midwives, care assistants, and supportive practice assistants; the rehabilitation group (RG) including occupational therapists, speech and language therapists, physiotherapists, podiatrists, and audiologists; and the psycho-social support group (PSG) including psychologists and social workers. A distinction was also made between three types of PC settings: solo practices, multidisciplinary practices, and monodisciplinary practices. Finally, PC professionals were divided into salaried employees and self-employed professionals.

Data analysis

Data were cleaned and managed before the analysis. All statistical analyses were done by SPSS 26 (SPSS Inc, Chicago, IL) and a P-value <0.05 was considered statistically significant. We analysed only the data of the respondents who completed the measurement instrument, meaning that different numbers are being analysed. Descriptive statistics on sociodemographics and work characteristics are presented as mean (with standard deviation) for continuous variables and percentages for categorical variables. Secondly, to identify significant correlates of BPSS, SEPSS, and AITCS, all potentially relevant variables (sex, age, years of experience, type of profession, type of setting and financial system) retrieved from the survey were associated with the total score of the instruments. Therefore, bivariate analysis through between-group differences in the instruments were evaluated by ANOVA-tests (post-hoc Bonferroni) for comparing the mean scores.

Ethical Considerations

The study was approved by the ethical committee of Antwerp University Hospital (UZA). The participants of the study received an emailed survey with a consent form and were assured that their responses will be kept strictly confidential, and only the research team will have access to the data. Research participants' identities were protected through anonymised web surveys (no name was requested). To further guarantee the anonymization, we did not report on individual cases, nor made it possible to identify any individual by a combination of several reported variables but presented aggregated data only. In accordance with the National and European Law on Privacy, all references toward persons in the data file were replaced by a generated code. Additionally, geo IP estimation was turned off to further ensure participants' anonymity, and research participants' identities were protected by controlled access to data. (Belgian registration number nr: B300201942302 with reference number: 19/42/461)

RESULTS

Table 1 demonstrates the descriptive statistics on demographics and work characteristics of PC professionals employed in Flanders. In total, 591 caregivers participated in this study, the mean age of the participants was 43,13±12,20 (SD) years, and the majority were female (male: 21,8%, Female: 78,2%). Although some professions were less represented in the survey, most Flemish PC professions participated.[47]

(Table 1 insert here)

Sociodemographic profile and work characteristics	**N (Missing)**	**%**
Total participation	591	100
Sex	591	100
Male Female	129 462	21,83 78,17
Age	586 (5)	99,15
21-35	193	32,94
36-50	211	36,01
51-75	182	31,06
Years of experience	591	100
0-5 years 5-10 years 10-20 years 20+ years	167 94 117 213	28,26 15,91 19,80 36,04
Discipline groups	571 (20)	96,62
1. Medical group General practitioners Pharmacists Dentists	159	27,85
2. Care and cure group Nursing Dietitian Midwife Care assistant Supportive practice assistant	136	23,82
3. Rehabilitation group Occupational therapist Speech and language therapist Physiotherapist Podiatrist Audiologist	163	28,55
4. Psycho-social support Psychologist	113	19,79

Social workers		
Setting	501 (90)	84,77
Solo practice	132	26,35
Multidisciplinary	135	26,95
Monodisciplinary	234	46,71
Financial system	573 (18)	96,95
Salaried employment	270	47,12
Self-employed	303	52,88

Table 1: Descriptive statistics on demographics and work characteristics.

Bio-psycho-social scale (BPSS)

In Table 2, scores of Flemish PC professionals on the subscales of BPSS are illustrated.

Subscales BPSS (Scores: 1-5)	**Group**	**N (Missing)**	**Mean ± SD**	**Significance**
Networking	**Total**	587 (4)	1,98±0,03	
	A. Sex	587 (4)		
	Male	127	2,17±0,78	0,003[A1]
	Female	460	1,92±0,60	
	B. Age	586 (5)		
	21-35	193	1,89±0,66	0,016[B1]
	36-50	211	1,96±0,66	
	51-75	182	2,08±0,66	
	C. Experience			
	0-5	165	1,91±0,67	
	5-10	94	1,95±0,64	
	10-20	117	2,00±0,72	
	20+	211	2,03±0,64	
	D. Profession	567 (14)		
	Medical	158	1,98±0,71	<0,001[D1]
	Care and cure	135	1,84±0,59	0,046[D2]
	Rehabilitation	161	2,14±0,70	
	Psycho-social support	113	1,91±0,61	
	E. Type of setting	497 (94)		
	Solo	129	2,20±0,75	<0,001[E1]
	Monodisciplinary	135	2,06±0,69	0,063[E2]
	Multidisciplinary	233	1,83±0,57	
	F. Payment model	569 (12)		
	Salaried employer	268	1,84±0,58	<0,001[F1]
	Self-employed	301	2,09±0,72	
Using the client's expertise	**Total**	587	1,86±0,03	
	A. Sex	587 (4)		
	Male	126	1,92±0,74	
	Female	461	1,84±0,63	

	B. Age	586 (5)		
	21-35	194	1,87±0,62	
	36-50	211	1,85±0,65	
	51-75	181	1,86±0,71	
	C. Experience	587 (4)		
	0-5	167	1,82±0,68	
	5-10	94	1,86±0,59	
	10-20	117	1,89±0,65	
	20+	209	1,87±0,67	
	D. Profession	566 (25)		
	Medical	156	2,00±0,70	0,004^{D7}
	Care and cure	136	1,89±0,61	
	Rehabilitation	162	1,76±0,64	
	Psycho-social support	113	1,74±0,60	0,007^{D6}
	E. Type of setting	497 (90)		
	Solo	128	1,69±0,70	0,004^{E3}
	Monodisciplinary	135	1,95±0,71	
	Multidisciplinary	234	1,88±0,62	0,012^{E4}
	F. Payment model	504 (87)		
	Salaried employer	270	1,89±0,62	
	Self-employed	299	1,82±0,68	
Assessment and reporting	**Total**	568 (23)	2,49±0,04	
	A. Sex	568 (23)		
	Male	123	2,64±1,00	0,011^{A1}
	Female	445	2,45±0,94	
	B. Age	567 (24)		
	21-35	184	2,61±0,98	
	36-50	208	2,50±0,96	
	51-75	175	2,36±0,91	
	C. Experience	568 (23)		
	0-5	160	2,62±1,01	0,086^{C1}
	5-10	91	2,31±0,97	0,087^{C2}
	10-20	112	2,64±0,91	
	20+	205	2,38±0,90	
	D. Profession	549 (42)		
	Medical	145	2,94±1,02	<0,001^{D1}
	Care and cure	134	2,25±0,95	
	Rehabilitation	159	2,43±0,77	
	Psycho-social support	111	2,32±0,92	
	E. Type of setting	481 (110)		
	Solo	122	2,42±0,96	
	Monodisciplinary	128	2,64±1,10	
	Multidisciplinary	231	2,50±0,91	

	F. Payment model	551 (40)		
	Salaried employer	260	2,41±0,94	
	Self-employed	291	2,54±0,97	
Professional knowledge and skills	**Total**	586 (5)	1,86±0,02	
	A. Sex	586 (5)		
	Male	126	1,91±0,55	
	Female	460	1,84±0,54	
	B. Age	585 (6)		
	21-35	193	1,86±0,50	
	36-50	211	1,88±0,55	
	51-75	181	1,83±0,57	
	C. Experience	586 (5)		
	0-5	166	1,81±0,48	
	5-10	94	1,84±0,52	
	10-20	116	1,94±0,58	
	20+	210	1,86±0,57	
	D. Profession	566 (25)		
	Medical	155	2,01±0,65	0,019[D1]
	Care and cure	135	1,81±0,47	0,014[D1]
	Rehabilitation	163	1,81±0,49	0,005[D1]
	Psycho-social support	113	1,77±0,49	
	E. Type of setting	497 (94)		
	Solo	129	1,85±0,65	
	Monodisciplinary	134	1,88±0,56	
	Multidisciplinary	234	1,87±0,48	
	F. Payment model	568 (23)		
	Salaried employer	268	1,81±0,48	0,074[F1]
	Self-employed	300	1,90±0,59	
Using the environment	**Total**	560 (31)	1,97±0,03	
	A. Sex	560 (31)		
	Male	117	2,06±0,94	
	Female	443	1,94±0,76	
	B. Age	559 (32)		
	21-35	188	1,99±0,79	
	36-50	199	1,97±0,83	
	51-75	172	1,92±0,78	
	C. Experience	560 (31)		
	0-5	160	1,98±0,78	
	5-10	92	1,84±0,76	
	10-20	106	2,00±0,83	

	20+	202	2,00±0,81	
	D. Profession	541 (50)		
	Medical	144	2,06±0,83	
	Care and cure	132	1,82±0,61	
	Rehabilitation	154	1,99±0,91	
	Psycho-social support	111	1,97±0,75	
	E. Type of setting	472 (119)		
	Solo	120	1,93±0,93	
	Monodisciplinary	125	1,99±0,86	
	Multidisciplinary	227	2,03±0,74	
	F. Payment model	542 (49)		
	Salaried employer	259	2,01±0,78	
	Self-employed	283	1,92±0,82	
Total BPSS score	**Total**	591 (0)	2,02±0,02	
	A. Sex	591 (0)		
	Male	129	2,14±0,58	0,047[A1]
	Female	462	1,99±0,50	
	B. Age	590 (0)		
	21-35	194	2,03±0,49	
	36-50	212	2,03±0,53	
	51-75	184	2,01±0,54	
	C. Experience	591 (0)		
	0-5	167	2,00±0,50	
	5-10	94	1,96±0,50	
	10-20	117	2,08±0,53	
	20+	213	2,03±0,54	
	D. Profession	571 (20)		
	Medical	159	2,17±0,57	0,001[D1]
	Care and cure	136	1,92±0,49	
	Rehabilitation	163	2,02±0,49	0,002[D2]
	Psycho-social support	113	1,94±0,46	
	E. Type of setting	501 (90)		
	Solo	132	2,00±0,58	
	Monodisciplinary	135	2,08±0,58	
	Multidisciplinary	234	2,02±0,46	
	F. Payment model	573 (18)		
	Salaried employer	270	1,98±0,50	
	Self-employed	303	2,05±0,54	

Table 2: SD= Standard Deviation. Scores of Flemish PC professionals on the subscales of BPSS. A1= male scored significantly better than female, B1= Care professionals who are 51-75 years old scored significantly better than care professionals aged 21-35 years old, C1= PC professionals with 0-5 years of experience scored significantly better than professionals with 5-10 years of experience, C2= PC professionals with 10-20 years of experience scored significantly better for assessment and reporting than professionals with 5-10 years of experience, D1= The medical group scored significantly better than the remaining three groups, D2= The medical group scored significantly better than the care and cure group, D3= The medical group scored significantly better than the care and cure group, and the psycho-social support group, D4= The rehabilitation group scored significantly higher than the care and cure group and the psychosocial support group.

Networking

For networking, male participants scored significantly better than female participants (Male: 2,17 vs female: 1,92 with p=0,003), care professionals who are 51-75 years old scored significantly better than their younger colleagues aged 21-35 years old (21-35 years: 1,89 vs 51-75 years: 2,08 with p= 0,016). Considering the participants' profession, the rehabilitation group scored the highest. They scored significantly higher than the care and cure group (Rehabilitation: 2,14 vs care/cure: 1,84 with p=<0,001), and the psychosocial support group (Rehabilitation: 2,14 vs psychosocial support: 1,91 with p=0,046).

PC professionals working in a solo practice scored significantly (Solo: 2,20 vs multidisciplinary: 1,83 with p= <0,001) better for networking than caregivers working in a multidisciplinary setting. Care professionals working in a monodisciplinary setting scored also significantly (monodisciplinary: 2,06 vs with multidisciplinary: 1,83 p= 0,063) better than care professionals working in a multidisciplinary setting.

Self-employed care professionals scored significantly better for networking than salaried employers (Self-employed: 2,09 vs salaried employers: 1,84 with p= <0,001).

Using the client's expertise

For using the client's expertise, we see that medical professionals scored significantly better than the psycho-social support group and the rehabilitation group (Medicals: 2,00 vs rehabilitation: 1,76; with p= 0,004 and psycho-socials: 1,74 with p= 0,007).

In addition, caregivers working in a solo practice scored significantly worse than caregivers working in a monodisciplinary practice (Monodisciplinary: 1,95 vs solo: 1,69 with p= 0,004), and caregivers working in a multidisciplinary practice (Multidisciplinary: 1,92 vs solo: 1,69 with p= 0,012).

Assessment and reporting

For assessment and reporting, males scored significantly better than female participants (Male: 2,64 vs female: 2,45 with p= 0,011). Besides sex, PC professionals with 0-5 years of experience (0-5 years: 2,62 vs 5-10 years: 2,31 with p=0,086) and PC professionals with 10-20 years of experience (10-20 years: 2,64 and 5-10 years: 2,31 with p= 0,087) scored significantly better for assessment and reporting than professionals with 5-10 years of experience. Furthermore, the medical group scored significantly better than the remaining three groups (Medicals: 2,94 vs care and cure: 2,25; rehabilitation: 2,43; psycho-socials: 2,32 with p= <0,001) for assessment and reporting.

Professional knowledge and skills

For professional knowledge and skills, the medical group scored significantly better than the three other groups (Medicals: 2,01 vs care and cure: 1,81 with p= 0,019; rehabilitation: 1,81 with p= 0,014; psycho-socials: 1,77 with p= 0,005). In addition, self-employed caregivers scored significantly better than salaried caregivers (Self-employed: 1,90 vs salaried employers: 1,81 with p= 0,074).

Using the environment

No significant differences were found for this subscale.

Total BPSS score

For the total BPSS score, males scored significantly better than female participants (Male: 2,14** vs Female: 1,99** with p=0,047**). The medical group scored significantly better than the care and cure group, and the psycho-social support group for the BPSS total score (Medicals: 2,17 vs care and cure: 1,92 with p= <0,001; and psycho-socials: 1,94 with p= 0,002).

The self-efficacy and performance in self-management support (SEPSS) instrument

In Table 3, scores of Flemish PC professionals on the subscales of SEPPS are illustrated.

Subscales SEPPS (Scores 1-5)	**Group**	**N (Missing)**	**Mean ± SD**	**Significance**
Assess	**Total**	488 (103)	2,37± 0,87	
	A. Sex	488 (103)		
	Male	100	2,32±0,86	
	Female	388	2,39±0,87	
	B. Age	487 (104)		

	21-35	161	2,52±0,78	
	36-50	173	2,33±0,90	
	51-75	153	2,29±0,91	
	C. Experience	488 (103)		
	0-5	138	2,36±0,82	
	5-10	85	2,40±0,85	
	10-20	96	2,39±0,86	
	20+	169	2,36±0,93	
	D. Profession	471 (120)		
	Medical	122	2,80±0,83	<0,001[D1]
	Care and cure	119	2,24±0,75	
	Rehabilitation	131	2,30±0,89	
	Psycho-social support	99	2,07±0,83	
	E. Type of setting	407 (184)		
	Solo	101	2,19±0,96	
	Monodisciplinary	110	2,43±0,89	
	Multidisciplinary	196	2,42±0,83	
	F. Payment model	471 (120)		
	Salaried employer	233	2,37±0,82	
	Self-employed	238	2,34±0,92	
Advice	**Total**	487 (104)	2,58±0,77	
	A. Sex	487 (104)		
	Male	100	2,64±0,84	
	Female	387	2,56±0,76	
	B. Age	486 (105)		
	21-35	161	2,67±0,64	
	36-50	173	2,53±0,84	
	51-75	152	2,54±0,82	
	C. Experience	487 (104)		
	0-5	138	2,57±0,72	
	5-10	85	2,53±0,68	
	10-20	96	2,62±0,77	
	20+	168	2,59±0,86	
	D. Profession	470 (121)		
	Medical	122	2,75±0,73	0,028[D3] 0,002[D3]
	Care and cure	119	2,47±0,80	
	Rehabilitation	130	2,67±0,81	0,02[D5]
	Psycho-social support	99	2,38±0,67	
	E. Type of setting	406 (185)		

	Solo	100	2,62±0,87	
	Monodisciplinary	110	2,63±0,80	
	Multidisciplinary	196	2,55±0,71	
	F. Payment model	470 (121)		
	Salaried employer	233	2,57±0,73	
	Self-employed	237	2,58±0,83	
Agree	**Total**	487 (4)	2,47±0,77	
	A. Sex	487 (4)		
	Male	100	2,38±0,82	
	Female	387	2,49±0,89	
	B. Age	486 (5)		
	21-35	161	2,44±0,79	
	36-50	173	2,49±0,88	
	51-75	152	2,48±0,97	
	C. Experience	487 (4)		
	0-5	85	2,40±0,79	
	5-10	96	2,51±0,90	
	10-20	168	2,57±0,95	
	20+	138	2,38±0,82	
	D. Profession	470 (21)		
	Medical	122	2,89±0,89	<0,001[D1]
	Care and cure	119	2,39±0,90	
	Rehabilitation	130	2,35±0,78	
	Psycho-social support	99	2,17±0,72	
	E. Type of setting	406 (185)		
	Solo	100	2,50±0,95	
	Monodisciplinary	110	2,65±0,90	
	Multidisciplinary	196	2,40±0,83	
	F. Payment model	470 (21)		
	Salaried employer	233	2,44±0,87	
	Self-employed	237	2,48±0,90	
Assist	**Total**	468 (123)	2,55±0,85	
	A. Sex	468 (123)		
	Male	98	2,53±0,90	
	Female	370	2,55±0,84	
	B. Age	467 (124)		
	21-35	155	2,57±0,77	
	36-50	164	2,54±0,84	
	51-75	148	2,54±0,96	
	C. Experience	468 (123)		
	0-5	82	2,60±0,83	
	5-10	89	2,54±0,85	
	10-20	164	2,58±0,93	
	20+	133	2,49±0,78	
	D. Profession	452 (139)		

	Medical	117	2,96±0,88	<0,001[D1]
	Care and cure	114	2,28±0,84	
	Rehabilitation	127	2,53±0,79	
	Psycho-social support	94	2,35±0,71	
	E. Type of setting	389 (202)		
	Solo	100	2,68±0,96	
	Monodisciplinary	104	2,52±0,89	
	Multidisciplinary	185	2,56±0,80	
	F. Payment model	452 (139)		
	Salaried employer	221	2,51±0,79	
	Self-employed	231	2,57±0,91	
Arrange	**Total**	468 (123)	2,91±0,78	
	A. Sex	468 (123)		
	Male	98	3,03±0,81	
	Female	370	2,87±0,77	
	B. Age	467 (124)		
	21-35	155	2,81±0,68	
	36-50	164	2,93±0,84	
	51-75	148	2,98±0,82	
	C. Experience	468 (123)		
	0-5	133	2,79±0,73	0,032[C3]
	5-10	82	2,80±0,63	
	10-20	89	2,92±0,79	
	20+	164	3,05±0,87	
	D. Profession	452 (139)		
	Medical	117	3,14±0,77	<0,001[D3]
	Care and cure	114	2,71±0,82	
	Rehabilitation	127	3,07±0,77	0,002[D4] <0,001[D4]
	Psycho-social support	94	2,60±0,58	
	E. Type of setting	389 (202)		
	Solo	100	3,16±0,81	0,001[E2]
	Monodisciplinary	104	2,96±0,82	
	Multidisciplinary	185	2,76±0,70	
	F. Payment model	452 (139)		
	Salaried employer	221	2,79±0,76	
	Self-employed	231	3,01±0,81	0,003[F1]
Overall competences	**Total**	468 (123)	2,13±0,78	
	A. Sex	468 (123)		
	Male	98	2,22±0,87	
	Female	370	2,11±0,76	
	B. Age	467 (124)		
	21-35	155	2,06±0,64	
	36-50	164	2,13±0,78	

	51-75	148	2,22±0,91	
	C. Experience	468 (123)		
	0-5	133	1,91±0,63	<0,001^{C3}
	5-10	82	2,10±0,64	
	10-20	89	2,22±0,80	<0,001^{C4}
	20+	164	2,28±0,90	
	D. Profession	452 (139)		
	Medical	117	2,53±0,86	<0,001^{D1}
	Care and cure	114	1,96±0,67	
	Rehabilitation	127	2,16±0,75	<0,001^{D4}
	Psycho-social support	94	1,75±0,56	
	E. Type of setting	389 (202)		
	Solo	100	2,27±0,96	
	Monodisciplinary	104	2,18±0,79	
	Multidisciplinary	185	2,05±0,66	
	F. Payment model	452 (139)		
	Salaried employer	221	2,02±0,67	
	Self-employed	231	2,23±0,88	0,005^{F1}
Total performance	**Total**	488 (3)	2,51±0,67	
	A. Sex	488 (3)		
	Male	100	2,52±0,71	
	Female	388	2,51±0,67	
	B. Age	487 (4)		
	21-35	161	2,52±0,54	
	36-50	173	2,50±0,71	
	51-75	153	2,52±0,76	
	C. Experience	488 (3)		
	0-5	138	2,42±0,57	
	5-10	85	2,47±0,57	
	10-20	96	2,55±0,69	
	20+	169	2,58±0,78	
	D. Profession	471 (20)		
	Medical	122	2,86±0,66	<0,001^{D1}
	Care and cure	119	2,35±0,65	
	Rehabilitation	131	2,53±0,67	<0,001^{D5}
	Psycho-social support	99	2,23±0,49	
	E. Type of setting	407 (184)		
	Solo	101	2,58±0,78	
	Monodisciplinary	110	2,58±0,72	
	Multidisciplinary	196	2,46±0,60	
	F. Payment model	471 (20)		
	Salaried employer	233	2,46±0,61	
	Self-employed	238	2,54±0,74	

Table 3: SD= Standard Deviation. Scores of Flemish PC professionals on the subscales of SEPPS. C3= PC professionals with 20+ years of experience scored significantly better than professionals with 0-5 years of experience, C4= PC professionals with 10-20 years of experience scored significantly better than professionals with 0-5 years of experience, D1= The medical group scored significantly better than the remaining three groups, D3= The medical group scored significantly better than the care and cure group, and the psycho-social support group, D4= Rehabilitation group scored significantly higher than the care and cure group and the psychosocial support group, D5= The rehabilitation group scored significantly better than the psycho-social group, E2= Care professionals working in a solo-practice scored significantly better than caregivers working in a multidisciplinary practice, F1= Self-employed caregivers scored significantly better than salaried caregivers.

Assessing: For assessing, we see that the profession of the participants plays a significant role in the scorings. Our results show that the medical group scored significantly better than the remaining three groups (Medicals: 2,80 vs care and cure: 2,24; rehabilitation: 2,30; psycho-socials: 2,07 with p= <0,001).

Advice: For advising, the medical group scored significantly better than the (p= 0,028) care and cure group, and the psycho-social group (Medicals: 2,75 vs care and cure: 2,47; with p= 0,028 and psycho-socials: 2,38 with p= 0,002). While the rehabilitation group scored significantly better for advising than the psycho-social group (Rehabilitation: 2,67 ; psycho-socials: 2,38 with p= 0,02).

Agree: For agreeing, the medical group scored significantly better than the remaining three groups. (Medicals: 2,89 vs care and cure: 2,39; rehabilitation: 2,35; psycho-socials: 2,17 with p= <0,001)

Assisting: For assisting, the medical group scored significantly better than the remaining three groups (Medicals: 2,96 vs care and cure: 2,28; rehabilitation: 2,53; psycho-socials: 2,35 with p= <0,001).

Arrange: For arranging, PC professionals with 20+ years of experience scored significantly better than professionals with 0 to 5 years of experience (20+ years: 3,04; 0-5 years: 2,79 with p=0,032).

Our research presented that the medical group scored significantly better for arranging than the care and cure group and the psycho-social group (Medicals: 3,14 vs care and cure: 2,71; psycho-socials: 2,60 with p= <0,001). Whereas, the rehabilitation group scored significantly better than the care and cure group and significantly better than the psycho-social group (Rehabilitation: 3,07 vs care and cure: 2,71 with p= 0,002; and psycho-socials: 2,60 with p= <0,001).

In addition, the type of work-setting of care professionals, and their payment systems influenced their scores on arranging. For instance, care professionals working in a solo practice scored significantly better than care professionals working in a multidisciplinary setting (Solo practice: 3,16 vs multidisciplinary: 2,76 with p= 0,001).

Self-employed care professionals scored significantly better than salaried employers (Self-employed: 3,01 vs salaried employers: 2,79 with p= 0,003).

Overall competences

For overall competences, we see that PC professionals with more than 20 years of experience scored significantly better than professionals with 0-5 years of experience (20+ years: 2,28 vs 0-5 years: 1,91 with p= <0,001). In addition, PC professionals with 10-20 years of experience scored significantly better than professionals with 0-5 years of experience (10-20 years: 2,22 vs 0-5 years: 1,91 with p= <0,001).

Next to the experience of PC professionals, the type of profession played a significant role in their scorings on overall competences. Thus, the medical group scored significantly better than the remaining three professional groups (Medicals: 2,53 vs Rehabilitation: 2,16; care and cure: 1,96; and psycho-socials: 1,75 with p= <0,001). In addition, the rehabilitation group scored significantly better than the care and cure group and psycho-social support group (Rehabilitation: 2,16 vs psycho-socials: 1,75 with p= <0,001).

Finally, the payment model played a significant role in the scores on overall competences. Self-employed care professionals scored significantly better than salaried employers (Self-employed: 2,23 vs salaried employers: 2,02 with p= 0,005).

Total performance

For total performance, our results show us that the type of profession is influential in the scorings. The medical group scored significantly better than the remaining three professional groups (Medicals: 2,86 vs Rehabilitation: 2,53; care and cure: 2,35; and psycho-socials: 2,23 with p= <0,001). While the rehabilitation group scored significantly better than the psycho-social support group (Rehabilitation: 2,53 vs psycho-socials: 2,23 with p= <0,001).

Assessment of interprofessional team collaboration scale (AITCS)

In Table 4, scores of Flemish PC professionals on the subscales of AITCS are illustrated.

Subscales (Scores 1-5)	**Group**	**N (Missing)**	**Mean ± SD**	**Significance**
Partnership	**Total**	156	2,41±0,79	
	A. Sex	156 (0)		
	Male	34	2,51±0,81	
	Female	122	2,38±0,78	
	B. Age	156 (0)		

	21-35	76	2,41±0,76	
	36-50	50	2,49±0,89	
	51-75	30	2,28±0,66	
	C. Experience	156 (0)		
	0-5	63	2,49±0,76	
	5-10	33	2,23±0,76	
	10-20	29	2,47±0,86	
	20+	31	2,36±0,79	
	D. Profession	150 (6)		
	Medical	45	2,46±0,81	
	Care and cure	42	2,25±0,62	
	Rehabilitation	38	2,63±0,97	
	Psycho-social support	25	2,21±0,58	
	E. Payment model	151 (5)		
	Salaried employer	100	2,23±0,66	<0,001^{F1}
	Self-employed	51	2,72±0,90	
Cooperation	**Total**	156	2,11±0,67	
	A. Sex	156 (0)		
	Male	34	1,94±0,67	
	Female	122	2,15±0,66	
	B. Age	156 (0)		
	21-35	76	2,14±0,65	
	36-50	50	2,15±0,68	
	51-75	30	1,95±0,68	
	C. Experience	156 (0)		
	0-5	63	2,20±0,71	
	5-10	33	2,06±0,59	
	10-20	29	2,13±0,63	
	20+	31	1,94±0,69	
	D. Profession	150 (0)		
	Medical	45	2,10±0,64	
	Care and cure	42	2,06±0,76	
	Rehabilitation	38	2,12±0,64	
	Psycho-social support	25	2,08±0,57	
	E. Payment model	151 (5)		
	Salaried employer	100	2,06±0,66	
	Self-employed	51	2,19±0,67	
Coordination	**Total**	155 (1)	2,71±0,89	
	A. Sex	155 (1)		
	Male	34	2,71±0,95	
	Female	121	2,71±0,87	
	B. Age	155 (1)		
	21-35	76	2,78±0,86	
	36-50	49	2,70±0,94	
	51-75	30	2,53±0,85	
	C. Experience	155 (1)		

	0-5	63	2,75±0,88	
	5-10	33	2,67±0,86	
	10-20	29	2,83±0,96	
	20+	30	2,53±0,87	
	D. Profession	149 (7)		
	Medical	45	2,74±0,87	
	Care and cure	41	2,46±0,83	
	Rehabilitation	38	2,92±1,01	
	Psycho-social support	25	2,63±0,75	
	E. Payment model	150 (6)		
	Salaried employer	100	2,52±0,76	<0,001[F1]
	Self-employed	50	3,09±1,01	
Total AITCS score	**Total**	156 (0)	2,40±0,67	
	A. Sex	156 (0)		
	Male	34	2,39±0,69	
	Female	122	2,41±0,67	
	B. Age	156 (0)		
	21-35	76	2,44±0,67	
	36-50	50	2,44±0,70	
	51-75	30	2,25±0,64	
	C. Experience	156 (0)		
	0-5	63	2,48±0,68	
	5-10	33	2,32±0,65	
	10-20	29	2,48±0,70	
	20+	31	2,27±0,66	
	D. Profession	150 (6)		
	Medical	45	2,43±0,69	
	Care and cure	42	2,25±0,64	
	Rehabilitation	38	2,56±0,75	
	Psycho-social support	25	2,31±0,52	
	E. Payment model	151 (5)		
	Salaried employer	100	2,27±0,60	<0,001[F1]
	Self-employed	51	2,66±0,74	

Table 4: SD= Standard Deviation. Scores of Flemish PC professionals on the subscales of AITCS. F1= Self-employed caregivers scored significantly better than salaried caregivers. * Since only a part of the participants (who work in multidisciplinary settings) were able to fill in the AITCS, we consider 156 participants as 100% participation rate.

For this scale, the payment model played a significant role in interprofessional collaboration. Self-employed care professionals scored significantly better than salaried care professionals on partnership, coordination, and total AITCS score (Partnership: Self-employed: 2,72 vs salaried employers: 2,23 with p= <0,001; Coordination: Self-employed: 3,09 vs salaried employers: 2,52 with p= <0,001; Total AITCS score: Self-employed: 2,66 vs salaried employers: 2,27 with p= <0,001).

DISCUSSION

In this cross-sectional survey, we first questioned participants' demographics. Afterwards, we evaluated their competences with three validated instruments to assess the competences of PC professionals for integrated care in Flanders.[31, 45, 46] Based on our data analysis, we observed significant differences between the various groups of caregivers.

As mentioned above, we used three different instruments to measure bio-psycho-social working, self-management support and interprofessional collaboration in PC.[31, 45, 46] Although these concepts are considered very important, only a few quantitative studies conducted in PC have used these instruments. The studies using these instruments were mostly exploratory studies, which did not observe or search for differences between primary care professions depending on their type of setting, payment system or professional background.[31, 46, 48-54]

Firstly, the BPSS allowed us to visualise the BPS model competences of the individual healthcare worker and the healthcare organisation. We were able to take into account all aspects of human functioning in their clinical work.[31] The results of the BPSS indicated that PC in Flanders is hardly working according to the BPS model since they scored overall less than 50%. Compared with other results obtained in other research performed in rehabilitation centres in Flanders and Ukraine, this seems to leave room for improvement.[31, 55] Comparing our results with another study conducted in the geriatric department of a hospital in Flanders (Belgium), we see that the scores differ greatly. Caregivers working in the geriatric department scored better for all subscales except assessment and reporting.[31] For networking, this could be related to differences in systems and structures between primary and secondary care.[56] In addition, caregivers working in a hospital in a specific department know each other better than caregivers working in different practices, which might influence their scores on networking, using the client's expertise, professional knowledge and skills, using the environment, and total BPSS score.[57]

We observed that self-employed caregivers working in a fee-for-service system scored better for all subscales of the BPSS in comparison to their salaried colleagues. This finding is contradictory to some literature, since they claim that working in a capitation system could improve a holistic approach to care.[58-60] An explanation might be that self-employed caregivers had to develop these competences more than their salaried colleagues who can rely on other caregivers with often a width variety of skills and competences. In addition, we know that the medical group consists of mainly self-employed professionals. Since our results show that the medical group scores better for the BPSS, both the type of profession and the payment system might be related to the BPSS scores. However, more research is needed to fully explain this finding.

Secondly, regarding the subscales of SEPPS, we found that caregivers with a medical background scored better than the other three groups. Specifically for arranging, PC professionals with 20+ years of experience scored significantly better than professionals who have less than five years of experience. Furthermore, care professionals working in a solo practice scored significantly better for arranging than care professionals working in a multidisciplinary setting, while self-employed care professionals scored significantly better than salaried employers. When comparing with an existing study, in which the instrument was tested and validated with nurses and nursing students in Flanders, we observe that overall, participants in our study scored better than the other study.[45] In another study on self-management support competences performed in Flanders, we can see that care professionals working in a multidisciplinary setting scored better than care professionals working in a solo practice. They scored even better if working in a capitation system.[61]

Thirdly, as with the AITCS, self-employed caregivers scored better for all sub-themes in comparison to their salaried colleagues. An explanation might be that self-employed caregivers have more say in their organisation, in comparison to salaried workers and that they have developed collaborative skills more than their colleagues.[62, 63] When we compare our results with the results of another study performed on 125 practitioners (registered nurses (58.5%), 8.5% were physiotherapists, and 5.9% social workers. Others included occupational therapists (5.1%), pharmacists (4.2%), physicians (2.5%), dietitians (2.5%), and practice nurses (2.5%)) from seven health care teams practicing within a variety of settings in two provinces in Canada, it is clear that our participants scored lower for partnership and cooperation. However, the Flemish PC providers scored better for coordination.[64]

Analysing the demographics of our study, some interesting characteristics were detected. Most of the participants in our study were female and the group with more than 20 years of experience formed the biggest group in our study, which was also in line with our expectations, as the ageing of caregivers is a major problem in Western countries.[65, 66] About half of the participants work in a monodisciplinary group practice, while 26,95% work in a multidisciplinary group practice and 26,35% in a solo practice. In Europe, there is an increasing trend of caregivers starting to work in different types of practices. In such a way that they can find a balance between providing ‘good care’ and having a sustainable work routine.[12, 67] According to De Sutter et al. working in a multidisciplinary setting facilitates cooperation and integration in PC.[68] Furthermore Kuijer et al. indicated that these settings may reduce workload and improve the mental health of caregivers.[69] According to Jabaaij et al., this increase in group practices is due to the female shift and an increased amount of part-time workers in healthcare.[12] Considering these advantages of working in (multidisciplinary) group practices, this percentage could be increased even more in the near future.

Our research presented that 47,12% of the participants are salaried workers, while 52,88% are self-employed. Looking at the available literature, neither payment model is superior to the other.[70] However, new payment systems such as value-based care are gaining popularity. Heiser et al. indicated that the most promising alternative payment model to fee-for-service payment is the accountable care organization (ACO) model and that the shift towards multidisciplinary practices could facilitate changes in the payment system of the practices.[71] Surprisingly, we find differences between older and more recent literature. While older literature is more positive about fee-for-service payment and solo-practices,[72, 73] more recent literature mostly indicated that the suitability of the type of setting (Group practice, solo-practice, …) and payment-model depends on the characteristics of each individual caregiver and that they consider alternative payment-models as valuable options.[62, 74-76]

We can present the following key learnings for care professionals: overall, we noticed that PC professionals in Flanders scored highly on the subscales relating to coordination, assessment and reporting. As we can see in the results, participants scored better on the subscales of assessment and reporting in the BPSS, arranging the follow-up care in the SEPPS, and coordination in AITCS. These three themes are important elements in care continuation and integrated care, which are considered very important by patients.[3] Based on our findings, we can assume that improving the competences included and measured in BPSS, SEPPS and AITCS, could contribute to a more integrated primary health care. The results are important both for students who will work in the care sector in the future and care professionals who are already working and want to enable lifelong learning. By using the results of this study, it is possible to identify working points and room for improvement in the competences of PC professionals regarding integrated care.

Strengths and limitations

The strength of this study was the large sample size and data collection methods to include care professionals working in Flanders. Furthermore, this study combined three reliable, and validated instruments to assess competences of PC professionals. This combination of measuring instruments made it possible to carry out a broad evaluation. New elements could be combined in this way that they had not previously been able to. In addition, to our knowledge, this is the first paper performing quantitative research combining the three instruments.

This study has several limitations. First of all, the survey was limited to Flemish PC, so the results may not be generalised to other countries or other levels of healthcare. Moreover, since this was a survey in Dutch, we were only able to include Dutch-speaking care providers. Secondly, to measure interprofessional collaboration with AITCS, we only included care providers working in a group practice. This caused a reduction of the sample size specifically for one instrument. Thirdly, the instruments we used in this study included Likert scales, which is prone to central tendency bias (selecting 'neutral' answers). Next, some professions such as pharmacists, or dentists were less represented in the survey. This raises the possibility of non-response bias. Furthermore, we should not oversee the possibility of reporting bias, which means that some PC professionals tend to overestimate or underestimate their competences. Finally, since we performed a cross-sectional study, we only investigated associations, not causal relationships. To investigate causal relationships, it is possible to perform longitudinal and randomized controlled studies.

CONCLUSION

This is the first study to use the combination of measurement tools measuring bio-psycho-social working, self-management support and interprofessional collaboration. By conducting this survey, we were able to compare the competences of healthcare providers based on their demographic and professional data. We see significant differences in scores on the measurement tools between various groups of caregivers working in PC in an unexpected way. In comparison to existing studies using the same instruments, the PC professional scores lower for most competences, except for coordination, measuring and reporting and arranging. Further research is needed to gain more insights into the explanation of these results, and find ways to develop interventions to improve competences measured by the instruments.

Acknowledgements

We are grateful for the partnership with the Primary Care Academy (www.academie-eerstelijn.be) and want to thank the King Baudouin Foundation and Fund Daniel De Coninck for the opportunity they offer us for conducting research and have impact on the primary care of Flanders, Belgium. The consortium of the Primary Care Academy consists of: Lead author: Roy Remmen–roy.remmen@uantwerpen.be—Department of Primary Care and Interdisciplinary Care, Faculty of Medicine and Health Sciences. University of Antwerp. Antwerp. Belgium; Emily Verté—Department of Primary Care and Interdisciplinary Care, Faculty of Medicine and Health Sciences. University of Antwerp. Antwerp. Belgium, Department of Family Medicine and Chronic Care, Faculty of Medicine and Pharmacy. Vrije Universiteit Brussel. Brussel. Belgium; Muhammed Mustafa Sirimsi—Centre for research and innovation in care, Faculty of Medicine and Health Sciences. University of Antwerp. Antwerp. Belgium; Peter Van Bogaert—Workforce Management and Outcomes Research in Care, Faculty of Medicine and Health Sciences. University of Antwerp. Belgium; Hans De Loof—Laboratory of Physio pharmacology, Faculty of Pharmaceutical Biomedical and Veterinary Sciences. University of Antwerp. Belgium; Kris Van den Broeck—Department of Primary Care and Interdisciplinary Care, Faculty of Medicine and Health Sciences. University of Antwerp. Antwerp. Belgium.; Sibyl Anthierens—Department of Primary Care and Interdisciplinary Care, Faculty of Medicine and Health Sciences. University of Antwerp. Antwerp. Belgium; Ine Huybrechts—Department of Primary Care and Interdisciplinary Care, Faculty of Medicine and Health Sciences. University of Antwerp. Antwerp. Belgium.; Peter Raeymaeckers—Department of Sociology, Faculty of Social Sciences, Faculty of Social Sciences. University of Antwerp. Belgium; Veerle Buffel- Department of Sociology; centre for population, family and health, Faculty of Social Sciences. University of Antwerp. Belgium.; Dirk Devroey- Department of Family Medicine and Chronic Care, Faculty of Medicine and Pharmacy. Vrije Universiteit Brussel. Brussel.; Bert Aertgeerts—Academic Centre for General Practice, Faculty of Medicine. KU Leuven. Leuven, Department of Public Health and Primary Care, Faculty of Medicine, KU Leuven. Leuven; Birgitte Schoenmakers—Department of Public Health and Primary Care, Faculty of Medicine, KU Leuven. Leuven. Belgium; Lotte Timmermans—Department of Public Health and Primary Care, Faculty of Medicine, KU Leuven. Leuven. Belgium.; Veerle Foulon—Department of Pharmaceutical and Pharmacological Sciences, Faculty Pharmaceutical Sciences. KU Leuven. Leuven. Belgium.; Anja Declerq—LUCAS-Centre for Care Research and Consultancy, Faculty of Social Sciences. KU Leuven. Leuven. Belgium.; Nick Verhaeghe—Research Group Social and Economic Policy and Social Inclusion, Research Institute for Work and Society. KU Leuven.

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Chapter 5: Experiences of care providers regarding patient-centred interprofessional collaboration and integration in primary care. A descriptive qualitative study.

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Under review at BMJ Open
A1 Journal, Q2, Impact factor: 2.9

Chapter 5 represents the third data source (care providers) of the exploratory phase. This chapter unveils the experiences of care providers in relation to patient-centred interprofessional collaboration. We opted for a qualitative descriptive study employing an inductive thematic analysis approach. The outcomes of this study provided us with valuable insights into the firsthand experiences of care providers concerning patient-centred care. These insights, along with the identified needs of care providers, significantly influenced the development of the IPCI toolkit. By drawing from these interviews, we were able to conduct a comprehensive market analysis to ascertain the requirements of care providers in establishing collaborations with a patient-centred approach. Armed with this information, we were able to precisely target key areas during the subsequent development phase in Chapter 6, thereby ensuring the alignment of the IPCI toolkit with the specific needs of Flemish care providers.

ABSTRACT

Keywords: Integrated care, interprofessional collaboration, patient-centred care, health economics, primary care, public health

Background: Interprofessional collaboration and integration (IPCI) is a crucial aspect of primary care (PC) where patients often require the coordinated efforts of multiple care providers. To achieve this, effective and patient-centred care (PCC) is necessary to ensure that the patient's needs and preferences are central to the care process. PCC has been shown to enhance patient satisfaction and improve health outcomes. By performing a patient-centred interprofessional collaboration and integration (PC-IPCI) in primary care, it is possible to put the patient at the centre of care by recognising the importance of the patient's perspective and experience in health care.

Research questions:
1. In primary care, what are the experiences of care providers regarding patient-centred interprofessional collaboration and integration?
2. What are the needs and preferences of primary care providers to improve patient-centred interprofessional collaboration and integration in primary care?
3. How to establish a patient-centred interprofessional collaboration and integration in primary care?

Methods: This study used a qualitative descriptive design with an inductive thematic analysis and explored care providers' experiences regarding PC-IPCI in primary care. Using maximum variation sampling we ensured that the participants represented a broad range of disciplines working in primary care providing a multidisciplinary character of the focus groups.

Results: In total, five focus groups (FGs) were performed in three waves, with in total 36 care providers, academics, policymakers and members of patient organisations, using maximum variation sampling. Wave one included an FG with five participants (academics and/or care providers), wave two consisted of three separate FGs, with 23 participants (academics, patient organisations, and policymakers), and wave three was performed with seven participants chosen from the second wave. The interviews lasted between 68 and 123 min, and the research resulted in the following five themes: (i) a shared vision in relation to readiness and attitude, (ii) improving the quality of care, (iii) open communication for PC-IPCI, (iv) importance of education, and (v) the appropriate financial/payment system.

Conclusions: Overall, the study provides valuable insights into the experiences of care providers in treating chronic patients in primary care through PC-IPCI and the need for improvement in this area. The findings of this study inform the development of policy plans and education programs to improve the quality of care for chronic patients in primary care.

INTRODUCTION

Worldwide, there is a proportional increase in the ageing population, which is thought to be caused by the continued decline in fertility rates and increased life expectancy [1, 2] Especially in high-income countries, ageing is an urgent issue and is threatening prosperity and future of these countries[2-5]. As a result of this ageing, there is also an increase in the prevalence of multimorbidity, which is the presence of multiple chronic diseases in a single person and poses major challenges to modern healthcare systems[6, 7]. The complexity and dynamics of multimorbidity and chronic diseases require collaborative and integrated therapeutic approaches that transcend traditional disciplinary boundaries[8]. Integrated care is proposed as a solution for multimorbidity and ageing, to improve patient experience and achieve greater efficiency and value from health delivery systems[9]. It involves tackling fragmentation, the integration of different levels and locations of care within the health care system and services provided to ensure continuity and coordination of care, health promotion and evidence-based treatment, appropriate to patient's needs and preferences[10].

To reach integrated care, seamless collaboration between care providers is essential[11, 12]. Interprofessional collaboration (IPC) is the process by which care providers from different professions work together to solve various problems and complex issues and improve patient outcomes[13-15]. It is even more important in the treatment of multimorbidity and chronic diseases because of the complexity and interrelationships between these diseases[16]. Patients with multimorbidity require coordinated care across multiple disciplines, including medical, nursing, rehabilitation, and community services[17]. The traditional approach of treating each medical condition individually, known as the "siloed" model, can result in fragmented and inconsistent care, leading to worse outcomes and higher healthcare costs[18, 19]. Studies have shown that interprofessional collaboration (IPC) can improve patient outcomes, including better quality of care, lower hospitalization rates, and increased patient satisfaction[20-23]. IPC can also lead to more efficient use of medical resources as providers work together to optimise care and reduce duplication or double work[24-26].

Many patients are taken care of by primary care, however, primary care practices still struggle to match patient needs and preferences. Patient-Centred Interprofessional Collaboration and Integration (PC-IPCI) is a healthcare model that emphasizes the central role of the patient in the decision-making process and the coordination of care among care providers[27]. This approach is well-suited for the management of chronic and multimorbid conditions that often require a holistic therapeutic approach beyond the provision of medical care[28, 29]. PC-IPCI facilitates communication and teamwork among care providers to improve the quality of care, patient satisfaction and patient outcomes[30]. Furthermore, patients are encouraged to take an active role in managing their own health, and their preferences are used in the development of care plans[31-33]. Additionally, multidisciplinary teams of health care providers and social services can improve the overall health and well-being of people with multimorbidity and chronic conditions[34]. Although much research is conducted on IPCI, there is still a lack of studies addressing ways to obtain a real and thorough patient-centred IPCI.

PC-IPC has several key features that distinguish it from traditional IPC models. First, PC-IPC puts the patient at the centre of care and recognizes the importance of the patient's perspective and experience in health care. By prioritizing patient-centred care, PC-IPCI has the potential to transform the healthcare system and promote a more equitable and efficient care[33]. Second, PC-IPC emphasizes the importance of teamwork and communication among care providers and recognizes the interdependence of healthcare and welfare. Finally, PC-IPC fosters a culture of continuous learning and improvement, encouraging care providers to work together to identify and address areas for improvement in patient care[35-37].

Implementation of PC-IPC requires a change in healthcare culture and practice. Care providers should actively adopt a collaborative, patient-centred approach and recognize the value of interprofessional teamwork to achieve better patient outcomes[12]. This requires changes in organizational structure and incentives, as well as ongoing training and professional development to develop IPC skills and competencies[38-40].

Research aims:

- In primary care, what are the experiences of care providers regarding PC-IPCI?
- What are the needs and preferences of primary care providers to improve patient-centred interprofessional collaboration and integration in primary care?
- How to establish a patient-centred interprofessional collaboration in primary care?

METHODOLOGY

Study design

We performed a qualitative descriptive study to explore care providers' experiences regarding PC-IPC in primary care. Qualitative focus groups were conducted in Flanders, using semi-structured interview-guides. During the focus groups, three different concepts; interprofessional collaboration, goal-oriented care and self-management support, were questioned with associated interview guides. However, in this study, we only focus on data regarding PC-IPCI. The whole study was conducted as part of the research project of the 'Primary Care Academy' (PCA), which is a network for research and education, consisting of 4 Universities and 6 Colleges together with a home care organisation (the White Yellow Cross) and the Flemish Patient Representative Organisation.

Participants and sampling

We included care providers, academics, policymakers and members of patient organisations as participants, using a maximum variation purposive sampling. The participants represented a broad range of disciplines, ensuring a multidisciplinary character of the focus groups. All participants were contacted through the network of the Primary Care Academy (phone and mail).

The interviews were performed in three waves. Wave one consisted of a very broad, pilot focus group with five participants, including mostly academics and/or care providers working at the Primary Care Academy. This was followed by wave two, consisting of three separate focus groups, with 23 participants who were welfare and care providers, academics, patient representatives, and policymakers. Finally, a third wave was performed consisting of seven participants chosen from the second wave, to achieve data saturation.

The focus group interviews were conducted between January 2020 and September 2020. All interviews except the first wave were organised using video conferencing platforms due to the COVID-19 pandemic. Furthermore, to ensure that we perform all requiring steps, we used the consolidated criteria for reporting qualitative research (COREQ) [41].

In addition, interviews were conducted independently by one researcher (MMS, DB, or LT) of the same team individually recorded and transcribed verbatim.

Data analysis

The data were subjected to inductive thematic analysis, using the following steps: (i) familiarizing with the data by reading and rereading the transcripts; (ii) identifying codes from significant phrases and sentences; (iii) collating these codes into subthemes and then merging them into themes; and finally, (iv) meeting with the other researchers (MMS, HDL, KVdB, KdV, PVB) to check and compare the emerged themes and subthemes and refining and naming them to generate a thematic map. Within the research team, any disagreements were discussed openly to reach a consensus on the final set of subthemes and themes. Microsoft Excel was used to manage and analyse the data. Transcripts were in Dutch and findings were translated, reviewed, discussed and refined in English with the research team until an agreement was reached.

Research team

The interviews were performed and transcribed by MMS (M), DB (F), and LT (F). Data analysis and reporting of the results was performed by MMS (M), HDL (M), KVdB (M), KdV (F), and PVB (M). The results of the study were discussed and validated by all co-authors, including DB (F), LT (F), PDV (F), and DVdV (M).

Ethical considerations

Ethical approval for the study was obtained from the Ethical Committee of the University Hospital Antwerp / University of Antwerp (B300201942302). All methods were carried out in accordance with relevant guidelines. The entire study was in accordance with the Helsinki Declaration[42]. Primary care stakeholders were informed that participation was voluntary, and that confidentiality would be ensured. All participants gave written informed consent in advance.

RESULTS

In total, five focus groups took place with 36 primary care stakeholders. An overview of the participants is given in Table 1. The focus groups lasted between 68 and 123 minutes. Finally, we were able to maintain multidisciplinarity in the focus groups representing a broad range of disciplines. In general, our results show that there is a difference between the experiences of the participants and needs and preferences regarding PC-IPCI.

Wave	Code	Background	Current Job
Wave 1 (123 min)	P1	Gerontologist	Policy worker
	P2	Nurse	Academician
	P3	Pharmacist	Academician
	P4	Physiotherapist	Academician
	P5	Occupational therapist	Academician
Wave 2a (68 min)	P1	Social worker	Care coordinator
	P2	Psychologist	Lecturer
	P3	Nurse	Project worker
	P4	Nurse	Diabetes nurse
	P5	Pharmacist	Pharmacist (P)
	P6	Social worker	Director of patient organisation
	P7	Pharmacist	Pharmacist
Wave 2b (90 min)	P1	Social worker	Social worker
	P2	Pharmacist	Pharmacist
	P3	General practitioner	General practitioner
	P4	Sociology	Policy worker patient organisation
	P5	Pharmacist	Pharmacist
	P6	Pharmacist	Pharmacist
	P7	Psychologist	Psychologist
	P8	Pharmacist	Pharmacist

Wave 2c (119 min)	P1	Occupational therapist	Occupational therapist
	P2	Occupational therapist	Occupational therapist
	P3	Social worker	Social worker
	P4	Nurse	Home nurse
	P5	Nurse	Care coordinator
	P6	General practitioner	General practitioner
	P7	Occupational therapy	Lecturer
	P8	Social worker	Health manager
Wave 3 (107 min)	P1	Psychologist	Psychologist
	P2	Nurse	Project worker
	P3	General practitioner	General practitioner
	P4	Sociology	Policy worker patient organization
	P5	Social worker	Social worker
	P6	Social worker	Health manager

Table 1: Overview of focus group participants in the three waves.

The qualitative analysis resulted in five themes to support PC-IPCI: (i) a shared vision in relation to readiness and attitude, (ii) improving the quality of care, (iii) open communication for PC-IPCI, (iv) importance of education, and (v) the appropriate financial/payment system.

Theme 1: A shared vision in relation to readiness and attitude

Readiness and an open attitude toward PC-IPCI are considered as essential elements to provide 'good care' according to the participants. Care providers experience a lack of shared vision and goals and indicate that professionals with a shared vision are better equipped to improve the readiness and attitude of their colleagues toward a PC-IPCI. However, even if practices develop a shared vision, this is often generated by the care providers themselves. Moreover, patients have hardly any influence on the development of this shared vision. Care providers suggest turning the tables and first developing a shared vision based on patients' perspectives. Subsequently, care providers can work on the needs and preferences of the patients and add their preferences in an optimal way. To make this happen, care providers should be open-minded and ready to ask themselves what they can do to improve the collaboration and to provide patient-centred care.

P3: "[It is] Important to develop a synergy." P1: "Problem is that it starts from the care provider and his vision. Maybe it can start from the patient, the patient's vision, and then give healthcare providers an opportunity to adjust a bit to that and then look at it like OK. What expertise can I add to this vision?"(FG1)

To use their competences in an optimal way and find synergy while collaborating with each other, care providers need to know their colleagues better. This seems hardly the case actually. Furthermore, they have to know what to expect from each other and what teamwork skills they can offer. In addition, our results show care providers must adapt themselves to reach synergy in teamwork.

P5: "Yes. To move more towards integration of care and I mean from the different perspectives. We need to first, ... we need to know each other first. Who is everyone? What can we expect from each other? Erm, what we offer each other? Where can we find each other? How can we interact with each other?" (FG1)

Theme 2: Improving quality of care

Evidence-based working in relation to quality of care

Care providers recognise the value of evidence-based working and identify the medical model as an important part of it. Although, participants experience diagnosis and treatment are prioritised, they also mention that the medical model alone is not enough. Other factors, such as input from experts or professionals in the field, patients and informal care providers should also be considered to address the complexity of care.

P2: "I think we have to be aware that we reasoned from the medical model for a long time. The medical model does have its merits. A person does need his/her diagnosis and treatment. The problem is that the medical model alone is not enough. All sorts of things need to be added to it. Preferably by people with expertise or people who can contribute something." (FG1)

Some care providers have mixed experiences about the importance of diagnosis as part of the solution. They believe that identifying problems through diagnostics is a step towards achieving objective of problem-solving. However, participants also express their concerns about the over-reliance on care providers and their ability to dictate what needs to be done, especially when patients are not feeling well. Care providers advocate for a medical model with a scientific basis and evidence to ensure quality of care.

P4: "That diagnosis is something approachable/touchable. In that sense, the diagnosis is already part of the solution. You make the problem concrete and then you are on the way to the goal. If you don't try to do it that way, I fear that when you don't feel sick, you are still going to get into a tangle and a web that's going to dictate a what you should do. And honestly, I don't feel that need. The day I am really sick, I do think I prefer to take control, but in that moment when I am not sick, I don't need care providers. That's how I feel about it. And if we are not careful, we are going to create a section of pastors who are going to talk me out of everything I am actually going to have to do. Do you understand? Not just pastors hey, 'modern pastors'. P4: Absolutely, in that respect I think a medical model with a certain rigour and a certain scientific foundation is necessary anyway." (FG1)

Importance of information sharing in relation to quality of care

As healthcare providers, participants recognize the importance of information sharing for the quality of care they provide. They indicate that information is the foundation and is essential for 'good care' for both patients and themselves. However, care providers also emphasise that information itself does not automatically lead to improved quality of care. It is an important construct and prerequisite for producing quality. Sharing information allows them to work together like a well-oiled machine. It allows them to better communicate with each other, pool their knowledge, make joint decisions, and it enables them to support and learn from each other.

Interviewer: "Can information sharing improve the quality of care?" P5: "Yes, anyway I think information is the foundation. I wouldn't say directly that if you have information, you automatically have a better quality of care, but it gives a structure and is a condition to create quality, both for the patient and yourself." (FG3)

In addition, to gather this correct information listening to the patient is indicated as a crucial skill. The ability to listen to each other and share information can really make a difference in the care they can provide.

P2: "And that listening... I thought that was enormously strong from that GP. I have to say. That was ... that (the listening) provided quality of care on that moment." (FG1)

According to care providers, it is important to keep up-to-date electronic patient records which are shared with all treating care providers. When care providers are not aware of the patient's history, patients experience frustrations due to over-questioning and crucial information may be lost during the care process. Therefore, it is important to capture as much information as possible per consultation and make it available to other healthcare providers. This way, the care providers experience better teamwork and are able to focus on the necessary and missing information.

P4: "Um, about the shared patient record, because from the patient's point of view that is also very important and it was very frustrating to have done a test at the GP, for example, a blood test, and two days later go to the hospital and hear: we no longer have that blood test, so now we have to do it again." (FG2b)

P2: "There are concrete examples from my practice where sharing information helped a patient tremendously and not sharing that information with other healthcare providers actually caused the whole process to be stopped, even boycotted a bit." (FG3)

Care providers indicate that interprofessional collaboration should not be limited to primary care and experience several issues on coordination between primary and secondary care, for instance on medication reconciliation and wound care. Especially the process after being discharged from the hospital is experienced as troublesome. According to care providers, there is a need for integrated care in which information sharing between the several care levels runs smoothly. However, they highlight that this integration is an even bigger challenge than collaborating in primary care only.

P4: "With that interprofessional collaboration, we always talk about primary care. But for the patient, the biggest problem is often in the secondary care and in the feedback process to the primary care. Lots of information and plans are sent to the hospital and there it stops because it doesn't come back. Or then suddenly medication is adjusted from the hospital, without being communicated to the GP who only hears about it a few weeks later when the patient comes to us for consultation after a few weeks. So, I really just wanted to emphasise that I think that interprofessional collaboration should not only be within the lines but also goes further to the second line and the third line. This actually is an even more difficult challenge sometimes." (FG2b)

Theme 3: Open communication in PC-IPCI

Care providers indicate that during communication with the patient, it is important to be transparent about what you know and what you do not know about the patient's condition. They experience this process as crucial, and our results show that conducting interprofessional communication may not neglect the patients' right to privacy. This means that the patient is the owner of his/her data and especially with the electronic patient record, patients should be considered main actor. In patient-centred interprofessional communication, these rights should always be considered, regardless of the literacy or knowledge of the patient.

P4: "The only thing that is important is, is that there is always transparency about who gets what information about the patient - because it can shock a patient that they suddenly come into the hospital and then a healthcare provider actually already knows everything. And that can be a difficult confrontation for the patient. We think it is important that there is good communication with the patient beforehand, about permission for the data. And it is also clear that it (data) can be forwarded. " (FG2b)

Improving the quality of life

According to our participants, establishing a diagnosis and creating a treatment plan is no longer enough to treat a patient properly. Moreover, they indicate that the patient should no longer be seen as someone having an illness whose symptoms you need to improve or help get rid of. Quality of life should be considered during their care process.

P1: "In the past, there was probably one possible (care) track. You had a diagnosis, and you had a treatment. Now you have three, four possible treatments for a diagnosis." (FG1)

Quality of life is an additional and very important outcome of providing 'good care'. Care providers indicate that caring for patients can no longer be done by one professional, but that collaboration between different care providers is necessary. Hereby, welfare workers are mentioned as important partners and they see collaboration between primary care settings and welfare organisations as a possible added value for the quality of life of the patient. On top of this, some care providers suggest broadening interprofessional collaboration by accepting the patient as a team member/partner and also involving them in the collaboration.

P4: "Interprofessional collaboration is named as only specifically the healthcare providers consulting with each other. Euhm, but we see that the patient and the expert by experience can also be seen as professional but in a different way. So, in terms of experiential knowledge about their own care, and what their quality of life looks like. In addition, beyond care providers, real welfare workers, because that gets forgotten a bit. So, making the link between welfare and care." (FG2b)

Balancing between autonomy and support

Providing care for patients in primary care requires a delicate balance between encouraging autonomy and providing support. Care providers experience empowering patients and promoting self-care as crucial, as this can lead to improved health outcomes and increased patient satisfaction. A balance between autonomy and support can be achieved by recognising the unique needs and preferences of each patient and tailoring care accordingly. Our results show that establishing a PC-IPCI can provide the stability and balance between autonomy and support, as expressed by care providers.

P5: "The provision of care for patients in primary care requires a careful balance between autonomy and support. By promoting patient-centred care and recognizing the unique needs and preferences of each patient, primary care can ensure that patients receive the appropriate level of care and support they need to manage their health effectively. This balance can lead to improved health outcomes, increased patient satisfaction and a more equitable and efficient healthcare system." (FG3)

Care providers presented that this balance between autonomy and support should be aligned with the needs, preferences, and individual circumstances of the patient. Open communication between patients and care providers is necessary to gain more information about the specific situation of each patient. Furthermore, this approach can increase patient satisfaction and equity in the care process.

P8: "This approach involves health education, the provision of appropriate resources, and the establishment of open communication between patients and healthcare providers. This can include the development of a care plan that takes into account the patient's individual circumstances and preferences, the provision of appropriate health information and the promotion of self-monitoring. By providing patients with the necessary information, skills and resources, primary care can support the development of a more autonomous patient who is better equipped to manage his health." (FG2b)

Care providers indicate that a 'one fits all' approach is not considered appropriate and causes problems for both patients able to manage their care needs and frail patients with a higher need for support. Issues and health conditions of frail patients with a higher need can be overlooked, while the patients who can manage their care are then in turn over-treated or feel patronised.

P8: "However, it is also important to recognize that patients have different levels of autonomy and that some may require more support and guidance than others. This may include the provision of care coordination, access to support services and the development of care plans that involve other healthcare providers. By providing a balance between autonomy and support, primary care can ensure that patients receive the appropriate level of care and support they need to manage their health effectively." (FG2b)

Theme 4: Importance of education

Care providers indicate that it is important to recognise that there are different types of care providers, each with their own specific competences for which they are trained, and that this distinction should be respected. They argue that all healthcare providers must learn to work with patients. For example, if a pharmacist finds it useful to engage a dietician in the care process of a patient and the patient agrees, this should be discussed. They also point to the importance of seeking agreement and co-determination with the patient. This means, for example, that the care provider has a record of contacting the patient later to discuss his progress. Ultimately, it is important to view working with patients as a partnership and work together to ensure the best possible care.

P7: ... "We talk about competences and we shouldn't start thinking that a pharmacist is a nurse or a psychologist and vice versa. We have to start from the competences which is what you ultimately chose in your education. But I think all of us care and welfare providers have to learn to work together with patients and with each other. ... If you think together with your patient that a step towards (...) a dietician might be useful and that patient feels good about it. (...) that you then work with that patient to make sure that step is taken. And even if that patient says, "I will do that.". Then I think you can still make a note in your file (...) to see if it happened." (FG2b)

Our results show that having trainings on interprofessional collaboration during university and college years, makes collaboration and teamwork between different disciplines more accessible. These trainings provide a way to know each other better and to know what other disciplines can or cannot do. Furthermore, these trainings provide a low-threshold way to connect. They note that in the past, collaboration was often hierarchical and top-down. Furthermore, some participants refer to experiences with colleagues who were amazed that they could collaborate with GPs and not just have to obey, as was initially taught.

P5: *"This is one of the reasons why we offer modules on interprofessional collaboration in education. We have noticed that over the past 16 years. (…) That we need to start to work more accessible and based on the needs. Those people who get in touch with each other before they start their professional lives. When they see each other again like, hey, that's one from my year of study. This creates an approachability/low threshold to look each other up. Uhm, so it used to be quite top-down and very hierarchical, but mainly in their heads. And I also experienced it with nursing colleagues. Wow are you crazy, collaborating with the GPs? Those who tell us what to do. We just have to nod yes."* (FG1)

Care providers emphasise that they have acquired certain occupational competences through study and continuing education and that they must continue to work within these competences. They recognise the importance of sharing information and tips with patients but state that they would not feel comfortable performing tasks without the appropriate skills and competences. They also recognise that some care providers are willing to go beyond their regular tasks or roles, however this should be limited to what falls within their core domain. Therefore, there should be a legal framework to support this and to avoid confusion in role distribution among care providers.

P1: "Yes, I think you also have in your legal framework also already of "What can you do as a healthcare provider?". Every healthcare provider has studied, has certain competences, and may or may not have to go for further training... Yes, you can go a little bit over your wall, you also have to look over your wall. But I would not feel comfortable suddenly having to go into a psychological conversation. We can give tips, and I do think it's helpful as a healthcare provider to give information about what you do and what your strength is ... But I would really start from the competences that you have." (FG2b)

In addition, patients should also be educated to choose the right healthcare provider at the right time. Patients who are more literate, able to better manage their healthcare needs and seek help in time, can also be helped preventively.

P5: "... That's how we are redesigning the educational landscape, looking from there. But if I look at it from family circumstances and environment, we know they are not going to seek help with that question yet. They are only going to come to us when they become patients." (FG1)

Theme 5: The appropriate payment/financial system

Care providers experience severe competition for more patients and income amongst each other, which negatively affects teamwork and patient-centeredness, and makes referrals to other providers more difficult. When care providers compete, it can lead to a system that prioritizes quantity over quality and can hinder patient-centred care. Furthermore, prioritizing finding more patients and earning more money can come at the cost of cooperation and trust among care providers. This may result in a reluctance to refer patients to other areas and facilities, ultimately impacting the quality of care. Rethinking payment systems to foster collaboration among care providers and prioritize the quality of care is crucial.

P5: "One must also be able and dare to trust each other. And if we continue to see each other as commercial competitors... As, my patient is my income, your patient is your income. That's how we are working now with the performance-based..." (FG1)

According to the care providers in this study, there is a need for a system in which care providers are compensated for 'interprofessional collaboration'. This implies that not only consultations with patients should be recognized as provision of care, but also the time spent on communication, coordination and cooperation with other disciplines both within and outside their own settings. In a system in which care providers' behind-the-scenes efforts are not acknowledged or compensated, they may face financial loss when collaborating, as their work is not considered part of their job. As a result, additional reimbursement and budget to be allocated for organizing regular meetings is needed in order to support teamwork.

P1: "Uhm yes, I wanted to comment on the multidisciplinary consultation. That it was actually a very good tool, in my experience, for years, both for psychological and physical care, to sit together with people outside your centre and your patient and the network, to coordinate the care properly. I find it very regrettable that those resources have been reduced so much. Now you can only meet once a year, whereas for people with chronic conditions we would meet twice or three times a year with the whole network … and that alone provided incredible support for a patient and enabled them to take control because it became very clear to them: what is the role of everyone and what is my role here around the table. So, I really want to emphasise that I find it very regrettable that a government is making cuts while you are making a move towards more primary care." (FG3)

DISCUSSION

This research resulted in five main themes including (i) having a shared vision in relation to readiness and attitude, (ii) improving the quality of care, (iii) open communication for PC-IPCI, (iv) Importance of education, and (v) the appropriate financial/payment system to have a PC-IPCI. In general, our findings suggest that PC-IPCI can be of great value in the treatment of patients. However, it is underlined that appropriate resources should be made available in order to fully implement / install PC-IPCI. Though part of our findings is consistent with previous studies, unique and new insights have appeared.

During the interviews, a significant gap between the experiences and preferences/needs of care providers is identified regarding PC-IPCI. Our study highlights the importance of having a shared vision to improve readiness and attitude towards PC-IPCI. However, we note that this shared vision is often generated by care providers without much input from patients. Incorporating patients' perspectives in the development of the shared vision is considered a facilitator[43]. This requires readiness and an open-minded position towards PC-IPCI, in which care providers are willing to ask themselves what they can do for the patient. Clausen et al. support the idea that developing a shared vision has benefits for interprofessional collaboration and a patient-centred approach[44]. Furthermore, studies indicate that engaging patients in this development process positively influences PC-IPCI[11, 45-47].

Care providers experience difficulties with incorporating their skills and competences into their practice or work setting. To achieve synergistic working and optimal use of competences during collaboration, care providers need to have a better understanding of the competences, skills, and roles of their colleagues. Efforts should be made to achieve synergy in teamwork by asking the right questions and understanding the perspectives of all team members. These findings align with the study of Dongen et al., who also identified five key factors that influence improving interprofessional collaboration by developing care plans: (i) patient-related factors, (ii) professional-related factors, (iii) interpersonal factors, (iv) organizational factors, and (v) external factors[48]. Furthermore, psychological safety and having a safe environment are upmost important to meet the needs and preferences of care providers regarding PC-IPCI. In addition, there are studies presenting that without knowing each other, collaboration cannot happen in an optimal way, especially for fluid teams[49-52].

In our study, care providers acknowledge and experience the importance of the disease-oriented medical model that prioritizes diagnosis and treatment based on objective patient data. However, they also emphasize the need to consider other factors, such as information from experts, professionals, patients, and informal care providers, to reflect the complexity of care. This is in line with existing literature on patient experience, which emphasizes the need for a balance between the professional and social skills of care providers[53]. Care providers should be able to make a correct diagnosis and develop a care plan or treatment, while also demonstrating open communication and viewing the patient as a partner[53-55]. In contrast to existing literature, some care providers in our study expressed mixed opinions on the importance of diagnostics as part of their solution. They believe that diagnosis is important because it helps to identify problems and is a step towards achieving the goal of problem-solving. However, they also have concerns about over-reliance on providers who decide on the care process.

Care providers experience information sharing as the foundation for providing "good care" to patients. It allows care providers to collaborate and communicate effectively, pool their knowledge, and enables shared decision-making. Listening to patients is considered a crucial skill in gaining correct information and providing good care. In addition, care providers emphasize the importance of maintaining up-to-date electronic patient records, with the condition that this information is shared among all treating care providers. This access might streamline the care process and avoid duplication of efforts. Findings of Perera et al. support our results, but these authors also indicate concerns regarding patient privacy[56]. Some studies suggest using blockchain technology to store patient data to address problems related to data leaks and patient privacy[57-62].

Establishing patient-centred interprofessional collaborative practice emphasizes the importance of communication and collaboration among care providers in delivering patient-centred care. Care providers should be transparent about their knowledge and involve patients in the decision-making process while respecting their privacy and personal space. Quality of life is recognized as a crucial outcome linked to patient-centred care, as it determines the balance between autonomy and support for patients[53, 63]. This enables tailored care based on patients' unique needs and preferences. Open communication between patients and providers is essential for gathering relevant information and increasing patient satisfaction with care. A one-size-fits-all approach is inappropriate as it overlooks the needs of frail patients and may result in overtreatment or patronizing of patients who can manage their own care. Aarts et al. have highlighted the relationship between patient-centred care and the quality of life of patients[64]. By prioritizing the needs, preferences, and values of patients and involving them in the decision-making process, their overall well-being and satisfaction can improve in various domains of life, including physical, emotional, social, and psychological aspects[65-67]. Additionally, this approach involves patients in discussions about treatment options, taking into consideration their preferences and lifestyle, and jointly developing a care plan that aligns with their values. According to Williams et al., this can result in better compliance with treatment and ultimately a better quality of life for patients[68].

To effectively implement PC-IPCI, there is a need for appropriate education for care providers, both before and after the start of their careers. Incorporating modules on interprofessional collaboration in universities and colleges has made collaboration between different healthcare disciplines more accessible. Care providers are able to understand each other's roles and capabilities and connect with professionals who have trained together. Additionally, our study reveals the importance of recognizing and respecting the specific competences of different care providers and including continuous learning in practices. Meleis et al. have identified several barriers to implementing interprofessional education, including the silos created by differences in professional identity and power. Without addressing these barriers, the goals of interprofessional education and collaboration may not be fully realised[69]. Shapmire et al. indicated the importance of a culture of continuous learning and have also identified additional barriers such as funding, equal representation of disciplines, crowded curricula, and a lack of best practices[70].

In our study, care providers expressed concerns about competition among themselves negatively impacting teamwork and patient-centeredness, leading to difficulties in making referrals. They emphasize the need to rethink payment systems to foster collaboration and prioritize the quality of care. Moreover, they advocate for a payment system that recognizes and compensates their collaborative efforts, including communication, coordination, and cooperation with other disciplines both within and outside of their settings. Increased reimbursement and budget allocation for organizing regular meetings can enhance teamwork and collaboration among care providers. These findings are consistent with existing studies. For example, Burwell et al. advocate for setting value-based payment goals, in which the amount healthcare providers earn for their services is tied to the results they deliver for their patients, and to improve the US healthcare system and to make it more accessible for patients[71]. Furthermore, evidence suggests that this payment system positively affects patient safety and satisfaction[72-75]. This is in line with the efforts in Flanders, in which recently a 'New Deal' is reported by the Federal Ministry of Health[76].

Strengths and limitations

This study has several strengths and limitation which will be explained in this section. We performed a qualitative study with focus groups including the experiences of 36 practitioners, professionals, academics, and patient representatives, using maximum variation sampling. By interviewing multiple disciplines, we were able to gain insights about PC-IPCI from different perspectives. Additionally, since the participants did not work in the same setting, they were possibly more transparent about the situation in their own work setting. We performed three different waves, and each wave had its own purpose. This allowed us to gain more knowledge about primary care in Flanders and PC-IPCI in a systematic way. Finally, we used an inductive thematic analysis and chose to use triangulation, as many researchers and practitioners of different backgrounds (pharmacists, nurses, psychologists, occupational therapists and a gerontologist) were included, which reduced the risk of bias and added to a broader applicability.

There are several limitations to this study. Firstly, all data is collected in primary care in Flanders, therefore findings may not be generalizable to other regions and other levels of healthcare. Secondly, this is a qualitative study, and it is established that researchers can influence the interpretation of data. Despite our methodology and efforts to reduce bias, it is common in a researcher influences the interpretation of the data. Finally, although we were able to gain plenty of information about the experiences, needs and preferences of care providers, we did not interview any patients, which can be seen as a limitation.

CONCLUSION

Our study highlights the importance of PC-IPCI and identifies a gap between the experiences and needs/preferences of care providers regarding PC-IPCI. PC-IPCI creates great value in the treatment of patients but requires adequate resources. Furthermore, involving patients in the development of a shared vision promotes PC-IPCI and care providers understanding each other's competences enhances teamwork. Implementing PC-IPCI requires a shared vision, focus on quality of care, open communication, adequate education, and an appropriate payment system. By addressing these factors, healthcare providers can work together effectively, improve patient outcomes, and enhance the overall quality of care provided.

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Chapter 6: Development of a toolkit to improve interprofessional collaboration and integration in primary care using qualitative interviews and co-design workshops

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Published in Frontiers in Public Health, on 17 April 2023.
Link: https://doi.org/10.3389/fpubh.2023.1140987
A1 Journal, Q1, IF: 6.461

Chapter 6 includes the development phase and is built on the findings from the exploratory phase (Chapters 2-5). This chapter describes a multiyear co-development process of the IPCI toolkit, with data originating from 65 care providers. Findings from this study were subsequently evaluated in eight co-design workshop sessions, organised with a total of 40 participants. This study resulted in the IPCI toolkit, consisting of eight tools to improve interprofessional collaboration and integrated care. Due to the performance of four previous studies (all A1 Journal articles), we were able to develop an evidence-based toolkit, aligned with the needs and preferences of primary care stakeholders including patients, care providers, academics and policymakers. Upon implementation, evaluation and further development and improvement, this compounded intervention (IPCI toolkit) should have a beneficial effect on the complex problem of interprofessional collaboration in primary care.

ABSTRACT

Keywords: Primary care, interprofessional collaboration, integrated care, sociocracy, psychological safety

BACKGROUND: Despite numerous attempts to improve interprofessional collaboration and integration (IPCI) in primary care, patients, care providers, researchers, and governments are still looking for tools and guidance to do this more efficiently. To address these issues, we decided to develop a generic toolkit, based on sociocracy and psychological safety principles, to guide care providers in their collaboration within and outside their practice. Finally, we reasoned that, in order to obtain integrated primary care, different strategies should be combined.

METHODS: Development of the toolkit consisted of a multiyear co-development process. Data originating from 65 care providers, through 13 in-depth interviews and five focus groups were analysed and subsequently evaluated in eight co-design workshop sessions, organised with a total of 40 academics, lecturers, care providers and members of the Flemish patient association. Findings from the qualitative interviews and co-design workshops were gradually, and inductively adapted and transformed into the content for the IPCI toolkit.

RESULTS: Ten themes were identified: (i) awareness of the importance of interprofessional collaboration, (ii) the need for a self-assessment tool to measure team performance, (iii) preparing a team to use the toolkit, (iv) enhancing psychological safety, (v) developing and determining consultation techniques, (vi) shared decision making, (vii) developing workgroups to tackle specific (neighbourhood) problems, (viii) how to work patient-centred, (ix) how to integrate a new team member, and (x) getting ready to implement the IPCI toolkit. From these themes, we developed a generic toolkit, consisting of eight modules.

CONCLUSION: In this paper, we describe the multiyear co-development process of a generic toolkit for the improvement of interprofessional collaboration. Inspired by a mix of interventions from in and outside healthcare, a modular open toolkit was produced that includes aspects of Sociocracy, concepts as psychological safety, a self-assessment tool and other modules concerned with meetings, decision-making, integrating new team members and population health. Upon implementation, evaluation and further development and improvement, this compounded intervention should have a beneficial effect on the complex problem of interprofessional collaboration in primary care.

INTRODUCTION

The number of people with chronic conditions has increased relative to the total population, resulting in a greater need for primary care (PC) professionals to collaborate interprofessionally and strengthen relationships with one another.[1, 2] Working in mono- and multidisciplinary group practices offers new possibilities and challenges in the context of care continuity and care coordination.[3, 4] Kringos et al.[5] indicated that a strong primary care system with a patient-centred approach can provide answers to the current challenges care providers are facing. They presented the following four innovations to handle the challenges: encouragement of cooperation between care providers, providing new payment systems and incentives for integrated and community care, making cooperation and teamwork a high priority, and enhancing a patient-centred care approach. However, collaboration with different professionals around a patient is not always easy, and asks for important skills to overcome difficulties within teams.[6, 7]

Over the past decades, several attempts have been made to define interprofessional collaboration and determine strategies to enhance cooperation between healthcare providers [7-10], using well-known strategies and methods that have been broadly described in the healthcare literature[11, 12]. However, some industries (e.g. ICT and automotive industry), have been sustainably adopting other ideas and practices to improve collaboration and integration, such as psychological safety and Sociocracy.[13-16] These might be reusable in healthcare settings.[17-21] Edmondson et al. described psychological safety as a shared belief that the team is safe for interpersonal risk-taking. [20, 22-24] Furthermore, Newman et al. identified psychological safety as a critical factor in the understanding of voice, teamwork, team learning, and organizational learning.[21] In a psychologically safe working environment, team members should feel comfortable, and unconcerned about being embarrassed, rejected, or punished for speaking up.[21, 23, 25] By fostering an environment of greater psychological safety, organisations can maximize everyone's skills and competencies.[21, 25] That’s why many companies such as Google used this concept to bring up innovative ideas or facilitate product development.[20] Although the concept of psychological safety offers many possibilities to achieve interprofessional collaboration and integrated care, it does not cover all aspects of interprofessional collaboration and integration. Additional concepts and practices are needed.

Sociocracy 3.0 (S3) is based on a governance model that focuses on the equality of individuals.[26-30] It is built on seven principles that shape organizational culture: effectiveness, consent, empiricism, continuous improvement, equivalence, transparency, and accountability.[30, 31] These principles are reflected in all facets of S3 and by understanding them, implementation of S3 is facilitated.[30] In Sociocracy, decisions are made based on 'consent'. This means that a decision can be made if there are no overriding objections from the team members against making that decision.[30-32] If there are substantial objections, the proposal will be amended until the objections are resolved.[26, 29] To avoid the trap of consensus, explicit consent to a decision by all team members is necessary. This means that, when making decisions, the range of tolerance of all team members will be taken into account, and final decisions should be located within this range of tolerance. If that is not possible, the proposal should be adapted in such a way that it fits the range of tolerance. In some democratic governance forms, a tyranny of the majority is a possibility, but in S3 all ideas get consideration.[30-33] In S3, team meetings are exemplified with a circle composed of equal team members.[30, 32-34] Communication in these circles happens in rounds enabling everyone’s chance to speak.[30, 32] Each new round starts with a different person, and reverses the direction to add variation in the sequence of opinions.[30, 32]

Though many isolated interventions and strategies have been used to improve interprofessional collaboration and integration in primary care[35-40], none of them have been shown to be sufficient to reach integrated care on its own.[37] We reasoned that, in order to obtain integrated primary care with the existing materials, these strategies could be combined. Therefore, we decided to develop – in co-creation with a lot of professionals, patient representatives, and academics – a toolkit that adapts and adopts existing strategies and methods from in and outside healthcare. We aimed to develop a practical toolkit that could be used by all types of primary care workers and practices, containing single tools that could flexibly be used to encourage collaboration across settings and care providers of all kind. Building further on a scoping review inventorying effective strategies for integrated care, this paper describes the process of development of the toolkit in Flanders, the Dutch-speaking region in Belgium.[41]

In this paper, we describe the process of development of the toolkit. This included inventorying (i) the strategies, methods and tools that are used in Flemish primary care teams to achieve efficient interprofessional collaboration and integration (IPCI) and desirable outcomes; (ii) strategies and methods from in and outside healthcare that could be adapted / adopted into the toolkit; (iii) and implementation and evaluation strategies of interprofessional collaboration and integration (IPCI) in primary care.

METHODOLOGY

Study design

The toolkit is based on data originating from primary care professionals, collected in several semi-structured interviews and co-design workshops, organised with professionals, academics and members of the Flemish patient association. In addition, all interviews, interview guides co-design workshops and tools were performed or developed in Dutch.

Semi-structured interviews

We used a qualitative, inductive approach to explore the experiences of primary care professionals towards interprofessional collaboration and integration in primary care. In addition, we tended to identify appropriate strategies and methods, used by primary care professionals to facilitate or improve interprofessional collaboration and integration. The semi-structured interviews were performed by MMS (PhD student) in two stages, using three different interview guides. (See supplementary material) This researcher was trained in qualitative research methods and performed previous qualitative research.[42-44]

We applied the following inclusion criteria to select practices: (i) they were established in Flanders, the Dutch-speaking part of Belgium, (ii) they were multidisciplinary settings, including at least two different disciplines, and (iii) they were officially recognized by the Flemish Government as healthcare settings. We invited all team members who worked in the practices to participate in the focus groups and included professionals who worked full-time (or at least 80%) and had experienced the establishment of the practice in the interviews.

Co-design workshop sessions

In total eight co-design workshop sessions were performed throughout the whole development process. Due to Covid-19 measures, these workshops were held online and were recorded after obtaining the participants' consent. Academics, practitioners, lecturers of different professional backgrounds and a member of a patient association participated actively in these workshops to co-develop the IPCI-toolkit. (Table 1)

All participants received an email beforehand with the questions asked during the workshop. Depending on the particular session some prototype elements of the toolkit necessary to prepare for the workshops were sent upfront.

Every session started with a presentation in which MMS presented the state of progress and the newest findings of the study. During this presentation, all participants were able to ask questions, and subsequently, KdV, HDL, KVdB and PVB in turn moderated the remaining parts of the workshop, each moderating a question. All participants answered the questions irrespective of their background in rounds as adapted from the S3 circle framework.[30, 32] This was repeated until participants had no further comments.[31]

Sampling and participants

Interviews and focus groups

We used purposive random sampling strategy to include participants for our study, specifically maximum variation sampling. The potential participants were contacted through the PC practices where they worked. To initiate contact, we sent an email to each PC practice that outlined the purpose of the study, their role in it, and described our research project. Finally, we requested the PC practices to invite all eligible team members to participate in our study. No relationship was established prior to this study.

Data collection continued until we achieved data saturation, which is a point that the collection of additional data no longer yields new insights. In addition, using a maximum variation sampling allowed us to ensure that we had collected a diverse set of perspectives and experiences from participants from different backgrounds and roles within their respective PC practices.

Co-design workshops

To select participants for the co-design workshops, we invited all members of the greater research team of working package five. Participants were contacted through email, which included information about the project and the specific workshop topic, as well as our expectations for their participation.

The selection was based on the involvement in the research team of working package five, expecting that their experience and expertise would provide valuable insights for the development of the toolkit. By including all team members, we ensured that we captured a diverse range of perspectives and feedback from individuals with different roles, experiences, and backgrounds. Moreover, we were able to use the collective knowledge to co-design a toolkit to improve interprofessional collaboration and integration in primary care. *The two-year development process*

The two-year toolkit development process consisted of (i) qualitative interviews with primary care professionals, (ii) co-design workshop sessions, (iii) content development, and (iv) IPCI-toolkit build-out. An overview of the development process is shown in Figure 1. Findings from the qualitative interviews and co-design workshops were gradually, and inductively adapted and transformed into the content for the IPCI-toolkit, using a sociocracy framework.[26, 27, 30] (Figure 1) More specifically, MMS analysed the collected data and subsequently, these analyses and findings were reviewed and approved by the researchers HDL, KVdB, KdV and PVB independently. Microsoft Excel was used to manage the collected data. Finally, Consolidated criteria for Reporting Qualitative research Checklist was used to check our manuscript.[45]

Stage 1(January – September 2020): Qualitative interviews and co-design workshops

In stage 1, a total of 11 in-depth interviews and two focus groups were conducted in four general practices and four mental health care settings. The interviews were transcribed ad verbatim and the following topics were discussed through the semi-structured interview guide: (i) how healthcare providers experience the current collaboration, (ii) the organisation of team meetings, (iii) information-sharing in the team, and (iv) interventions and strategies to improve collaboration and integration in primary care. A detailed overview of the research characteristics regarding the interviews and focus groups in this stage is presented in Table 2.

Based on the findings of the interviews and focus groups during stage 1, the first two co-design workshop sessions were organised (see Table 3 for the workshop set-up and participant characteristics). After performing discussions during the workshops, we decided to continue our data collection in multidisciplinary general practices. Besides, additional focus groups were needed to gain more insight into the teamwork and the team dynamic of general practices. For this reason, a new semi-structured interview guide (see supplementary material) was developed for stage 2, to be deployed in multidisciplinary general practices only. (Table 2 and 3)

Stage 2 and 3 (September 2020 – November 2021): Semi-structured interviews in general practices and the outline of co-design workshops

In a second stage, we performed a qualitative study consisting of semi-structured interviews with care professionals working in general practices and subsequently four co-designing workshops. A total of two in-depth interviews and three focus groups were conducted in four general practices, with 19 caregivers. A semi-structured interview guide was used, addressing the following topics: (i) structure of the team, (ii) shared goals and vision, (iii) collaboration with team members, and (iv) coordination with and around the patient. The interviews were transcribed ad verbatim and thematic analysis was performed. A detailed overview of research characteristics is available in table 4.

Additionally, four co-designing workshops were organised in which the following topics were discussed: (i) determining appropriate interventions (WS3), (ii) developing and adjusting a toolkit, based on team performance (WS4), (iii) discussing a first draft of the toolkit (WS 5), and (iv) discussing the second draft of the toolkit (WS 6).

The focus of each co-designing workshop was as in table 5.

Based on the data of the interviews and co-designing workshop sessions three and four, we developed a first and second draft of the toolkit (stage 3). This first draft was discussed and evaluated in the fifth workshop session. Based on the findings of the fifth workshop session, a second draft of the toolkit was developed. Subsequently, we organised a sixth co-designing workshop to discuss the second draft of the IPCI-toolkit and based on these findings we developed the last version of the IPCI-toolkit. (See supplemental material)

Stage 4 (November 2021 – April 2022): Getting ready for implementation and evaluation of the toolkit

In a third stage, we performed two co-designing workshops to prepare the IPCI-toolkit for implementation in primary care settings and to identify strategies to evaluate teamwork and the impact of the IPCI-toolkit. We discussed: (i) the definition of efficient teamwork, (ii) adopting data from the self-assessment tool into the toolkit, (iii) strategies to facilitate the continuity of the implementation, (iv) how to deal with changing teams, and (v) foreseeing and anticipating the possible barriers while implementing. (Table 6)

RESULTS

We first elaborate on the results from the interviews, focus groups, and co-design workshops. From the qualitative data, the following ten themes were identified: (i) the importance of interprofessional collaboration, (ii) the need for a self-assessment tool to measure team performance, (iii) preparing a team to use the toolkit, (iv) enhancing psychological safety, (v) developing and determining consultation techniques, (vi) shared decision making, (vii) developing workgroups to tackle specific (local) problems, (viii) how to work patient-centred, (ix) how to integrate a new team member, and (x) getting ready to implement the IPCI toolkit. These teams were underlying the construction of the toolkit. See Table 7 for more details on these themes. Next, we will outline the toolkit we developed.

Theme 1: Importance of interprofessional collaboration

According to care providers, a well-performing interprofessional collaboration can improve the quality of care. The multiple perspectives of different disciplines were reported as one important advantage. Multidisciplinary teams also provided better monitoring resulting in improved identification of complications.

"For me, interprofessional collaboration is related with the care you give to a patient. Of course, if I worked alone as a general practitioner, I would never be able to offer the quality that we offer here as a team. […] I'm convinced of that!" "… For example, diabetes… The cooperation that we have in this regard ensures that the patient is often better monitored than that you as a doctor or nurse would do alone."(GP)

Next to strictly biomedical disciplines, it was important to have social and mental health workers in the practice.

"…. we have a social worker in our team, as well as a psychologist. A patient is not just a body. Just because everything is okay with the body doesn't mean the patient is okay. And I think since we now have those specializations in-house that we can expand (care providing) ..."(GP)

Theme 2: The need for a self-assessment tool to measure team performance

Care providers from the interviews and focus groups indicated the willingness to measure their level of teamwork, but also reported the lack of accessible, deployable tools or information on current collaborative practices.

Participants of the co-design workshops, on the other hand, specified that there are ways to measure teamwork, but few were appropriate for use in primary care. During these workshops, the need for validated scales was raised and several existing scales and literature were presented. Workshop participants also recommended to measure more than only interprofessional collaboration by including aspects such as psychological safety and bio-psychosocial working. In addition, they proposed to also measure health conditions, working conditions, and job satisfaction of the care providers.

Theme 3: Preparing a team to use the toolkit

Developing a shared vision

According to care providers, having a shared vision is an important requirement to practice and improve IPCI in primary care settings.

Participants distinguished long term and short-term visions and listed their policy plans periodically. Nurses, GP's, and other allied healthcare professionals indicated that developing this shared vision needs to happen in collaboration with all team members. Appropriate questions should be asked in meetings to reflect on the needs and preferences of the practices. The practices perform evaluations to assess the suitability of their vision regularly and checked whether modifications were necessary. If needed, their shared vision can be upgraded depending on contextual factors.

While developing a shared vision, it is important to maintain a patient and population centred approach. Care providers set their vision and goals to provide accessible care and included the wish of patients to become autonomous in their vision and goals. Additionally, some practices explicitly include concepts such as accessibility of care and patient-centred care in their shared vision.

"We all want to provide accessible care; we all want those patients to have low-threshold access to care. Above all, we want them to be as self-reliant as possible. This is the vision of that house for care and well-being (practice), that's what we stand for." (GP)

"What do we want to strive for as a practice?" Forming a vision for the team that every employee supports and is jointly responsible for. That's crucial." (Nurse)

Developing shared goals

When care providers with different backgrounds collaborate in an interprofessional team, developing common or shared goals are important. Most participating practices were successful in developing a shared vision, and they indicated that having realistic goals was also necessary to deliver 'good care'. Practices distinguished year goals and end goals, and to reach these goals, having a coordinator in their setting was seen as facilitating. Hiring a coordinator reduced the other professionals' workload and helped them to focus on their core duties, instead of spending time on administrative and managing tasks. This was experienced as 'pleasant', and they were convinced that, even if they couldn't hire a coordinator, they still needed a team member taking a coordinating role to facilitate the collaboration.

“Yes, we do indeed work with people and (work) patient-centred. But when it comes to collaboration, I think it doesn't matter if we work in a community health centre or another company. There is a need for […] someone who keeps the overview and who can see that, okay, ‘the company' needs this to be able to continue working or to be able to grow." (GP)

Theme 4: Enhancing psychological safety

Achieving a lateral hierarchic structure

According to care providers, a psychologically safe work environment starts with treating every team member equally and recognising their skills and competencies. Teams should not be allowed to maintain a hierarchy between nurses and doctors. In addition, care providers indicated that not only care providers, but all personnel should be counted as equal team members.

“I think everyone has trust in the other care providers and that you can therefore communicate openly. And that you shouldn't be afraid to say something. […] I do have the feeling that you can say your opinion here and that you are respected for it. If someone has a different opinion, it can just as well be broadening for yourself. To create a broader picture (perspective).” (nurse)

Care providers indicated that having a lateral hierarchic structure was important to obtain an open culture, which means that all team members feel comfortable and can speak up for themselves. This lateral hierarchic structure increased the approachability/accessibility to ask for advice from colleagues, though achieving this lateral hierarchic structure required major adjustments from care providers with higher education or profile. Being ‘open-minded’ and having trust towards lower educated colleagues seemed essential to facilitate teamwork.

“That's also because we work quite horizontally here. And got the hierarchy out of it. So that also means that you go much faster […] as a nurse to a doctor to discuss something about a patient.” (nurse)

“You also have to be sufficiently open-minded, especially as a doctor. Because classically, of course, the doctor is above the others or has the final word. So as a doctor you have to be open-minded, […] to try that. That might end well or I'll see how it goes. And afterwards I think the next step is trust, because you […] as a doctor, you're going to check everything about your colleague because you don't trust it. Therefore, you cannot start by saying that we will […] work interdisciplinary.” (GP)

Having trust in each others’ competencies and skills

Having trust in the capacity of a colleague enhances open communication, respondents said. Care providers should be able to trust and know that everyone is working as a professional, but at the same time care providers should understand that their colleagues are still human. A care provider cannot do everything and can make mistakes. Being able to talk about their mistakes and being able to rely on each other’s understanding is found to be important to deliver ‘good care’.

In addition, they indicated that the lack of mutual trust or respect between care providers could hinder the implementation of efficient care. Well-cooperating disciplines and the provision of quality care to chronically ill patients were thought to be interrelated.

“Good cooperation between GPs and nurses is crucial. This is only possible through openness and through trust in everyone's abilities. This means that we believe that the skills and view of the nurses towards the patients is an added value for us as GP’s.” (GP)

Good and open communication was found crucial for the collaboration between the different disciplines. Care providers wanted to feel comfortable and supported by their colleagues. This feeling increased their confidence and improved the collaboration between the GP’s and allied healthcare workers, which positively affected care continuity. In some cases, it was indicated that if acknowledgement and recognition for professionals’ skills and competencies were lacking, negatively influenced teamwork. Finally, organising team building activities regularly, and having fun together was presented as a facilitator for teamwork.

“A GP trainee asked me if I knew how to perform an intramuscular injection. Here (in this case) she underestimated my knowledge and skills and therefore she found it difficult to trust the care of the patients to me.” (Nurse)

“Our team building, […] yes that is very classic of course. But that it can also promote group formation. And I also think it's important that you regularly have some fun with each other. […] That is the salve on the wounds that may be left by working together. (Nurse – coordinator)

Having an open-culture

Care providers experienced ‘having an open culture’ in a setting as very important for teamwork. The possibility to speak to anyone in one’s setting was encouraged and promoted, provided that their colleagues were also open to receive feedback. Care providers should have the opportunity to express themselves safely.

“I think the worst thing that can happen, not just for triage, but also for other projects, is that there are frustrations that go unspoken. That's not good of course. When we say that something is not going well or that it is more difficult, this is certainly taken into account. Afterwards we will reconsider how we can approach this differently.” (GP)

Theme 5: Developing and determining consultation techniques

Organising structured team meetings

Care providers preferred structured team meetings. They searched for strategies to use these meetings optimally in terms of efficiency and effectiveness. This meant that they wanted to be able to organise team meetings without feeling that they are losing time, and they think that an external person (someone who is not a team member) may be very useful in this regard.

“What if those team meetings were a little more structured?” Answer: *“… it would increase efficiency enormously and yes, the things we have now tried to mix (to have a structured meeting) … that we no longer have to do that and that we can simply bring our expertise into it in terms of content. So, I think it is very useful if you also have someone external for that. (An external person to develop structured meeting protocols)” (GP)*

The interviews showed that practices performed daily, weekly and in some cases monthly team meetings. During our study, we identified formal and informal team meetings. While both types of team meetings were used in the practices and provided an added value to teamwork, according to care providers, face-to-face contact seemed to be the most important and preferred communication technique.

“Every 24 hours, around noon, we meet to discuss the past day. This meeting gives a lot of value every day, to see very quickly; 'What is wrong here and where are the bottlenecks?” (GP)

Informal team meetings

Caregivers gave special attention to informal, face-to-face communication between team members. It was described as something which grows over time and becomes a culture in the practice. Every practice developed its habits and activities regarding informal communication. An example of this activity was lunching together. Moreover, most informal meetings happened while lunching.

"The fact that we all eat together in the afternoon … in which work-related things are often discussed (in the meetings). So, it is actually a regular habit that everyone eats together." (Social worker)

According to care providers, a more open culture was achieved because of these informal meetings. The barrier to meet each other, or to say 'something' urgent whilst performing care lowered. This was mentioned as 'being more accessible' towards each other. They indicated that, when lunching jointly, they were able to switch to a formal topic, if urgent cases occurred.

Formal team meetings

Care providers mentioned different types of formal team meetings. First, there were medical meetings, in which medical professionals were included (e.g. GP's and nurses). In these meetings, care providers predominantly discussed cases of patients, which needed an interprofessional treatment. Secondly, they organised team meetings to discuss organisational matters. In these meetings, all team members were invited, and more practical matters of teamwork were discussed.

"Yes, there are weekly meetings. On Monday there is […] a medical meeting. In which the doctors, nurses and very occasionally I participate as a physiotherapist. This mainly concerns substantive cases. On Thursday there is a kind of team meeting, […] during which an update is mainly given by our coordinator. […] But at that moment cases are also discussed that are somewhat more complex, where that […] the paramedical branches also contribute." (Physiotherapist)

For these meetings, a logbook was drawn up and shared before the start of the meeting. This logbook consisted of the meeting topics, expectations, duration, and the necessary preparations. These meetings were experienced as an important activity to improve interprofessional collaboration and were recommended by all care providers. In general, they thought that the medical meetings could be more structured, and by using the right tools, they could be more beneficial.

"That is actually based on how we perform meetings. It can be a bit chaotic at times. We do try to think outside the box. […] And I think there are tools for that, to make it a little more structured." (GP- everyone agreed)

Interprofessional team meetings had many advantages. Care providers indicated that by including multiple professions and disciplines in the team meetings, cases were discussed more thoroughly, and they were able to find better solutions for their patients. In comparison to thinking and acting on their own, they were able to act upon and look at info from various perspectives. In addition, not using the available skills, competencies and experiences was seen as a waste of time and financial resources.

"You can share a lot; you can bring all that expertise together in one point and everyone can work on it from their own point of view … Yes… we can think together about a client and that is just very useful because if you work on a certain line for a long time, the first, the second or the third line (primary, secondary, and tertiary care), then you only see your own line and it is good to be able to consult others and then coordinate… so I think that the fact we can think about it together is very, very useful." (psychologist)

Digital meetings

Another form of communication was digital communication, in which care providers made use of chatting applications, video meetings and electronic patient records. It was experienced as an easy way of communicating with each other. Especially the communication between primary care and secondary care settings proceeded mainly through this channel. Not working under one roof was less of an issue, and digital communication tools increased the accessibility of some care providers towards other settings and disciplines. Care providers also indicated that there is still a lot of work to be done to perform efficient digital meetings. Yet, developing integrated medical record files was seen as a responsibility of the government. Keeping those files up to date was mentioned as a major issue and an important barrier to performing 'good care'.

"I, the doctors and some nurses use an application. That is a kind of (medical) chat app […]. And I then send communication or specific medical data about a patient to other fellow physiotherapists. We also use that app regularly." (physiotherapist)

Despite the many advantages of digital communication, care providers opted that physical appearance was still needed to maintain a good collaboration. They preferred to see their colleagues in real life. Care providers indicated that there is a lack of interaction, and non-verbal expressions when meeting online. For this reason, they performed physical meetings as much as possible.

"The idea was to do online meetings. We have advocated for that to continue live meeting. For myself, I find that meeting more convenient, when you see the people in person. […] I think you miss a lot in terms of interaction, in terms of expression. The

little things you can pick up in person. And you have that much less with [online] meetings." (Social worker – everyone in the focus group agreed)

Building networks between caregivers originating from different settings

Interprofessional team meetings also took place with care providers from outside the practice. If needed, multidisciplinary consultations (MDOs) were organized for patients with complex health needs. In Belgium, these MDO meetings are financed by the government and are meant to discuss the situation of patients' complex care needs multidisciplinary. According to care providers, it worked beneficial for mapping the care network of the patient. By meeting care providers from different settings regularly, the threshold for contacting care providers from different practices was lowered.

"So, regarding a MDO (multidisciplinary meeting in Flanders), you do hear from the patient who is involved, but they do not know the first and last name, for example. […] But that makes it difficult for us to know exactly who that is. There is also always a limit to calling or emailing someone you've never seen before. […] And after such an MDO it is easier, because you then have each other's e-mail addresses. You've seen each other before. So, it is easier to contact each other afterwards." (GP)

According to care providers, being autonomous and self-sustaining made the construction of networks with external settings and organisations more accessible. Although team members were given more autonomy, they still required someone with a coordinating role to link the different organisations or settings. Teams preferred to have a connecting person between different settings. As this connecting person was lacking, many settings stopped collaborating.

"It is necessary that every organization must have a connection, otherwise they will drop out … That is a very big advantage of (Mental health organisation), the faster you can be there, the more open people can go there, the faster the problem is solved… they do trust it and they also believe in the preventive function of (mental health organisation)" (psychologist)

These connections and networks built by care providers seemed to facilitate information sharing about their patients. They indicated that they received and sent more referrals to these organisations after knowing more about each others' work settings. As patients received care from the right care providers, the providers felt more comfortable treating patient profiles in line with their knowledge. Each practice or setting chose a common contact person to connect their settings. These common contact persons connected general practices with nursing, and mental health and welfare organisations, and brought innovations to the practices. Moreover, they were able to learn from these practices and care providers with different scopes.

“You learn a lot about the other organizations. Even if you're not in it. And you get so much information. Every employee brings in an enormous amount of information into (the mental health organisation) And that is very useful. But also vice versa, they also take what they learn from each other back to their own teams. They already know about that in these teams, … (citing her colleagues) oh, be careful because within (another mental health organisation) they work differently, or they do this or that.” (Social worker)

The practices differed from each other and had specific needs which distinguished them. However, these differences in needs didn’t bring any disadvantages to their collaboration. The different structure of every organization or setting was acknowledged when building networks and this was seen as an added value.

“You notice the differences between the organizations when you hear more background. But that does not affect our way of working together. It's not like there are downsides or anything like that. You get to know the organizations a little more from the inside through your colleagues.” (GP)

Coordination and role distribution

Coordination and the distribution of roles and responsibilities were important to achieve efficient teamwork. Care providers wanted to be able to share their responsibilities and tasks, without losing their freedom or feeling hindered by their colleagues. According to care providers, clear role distributions and responsibilities were needed, so that every caregiver was able to understand and perform according to their duties. Uncertainty about the division of roles led to mutual irritations, conflicts and inefficient patient care.

“I have the idea that our coordinator mainly creates the setting in which we can work so that it actually offers a lot of structure. So, the substantive work, that we have a lot of freedom in that. Yes, that he really holds and creates a framework in which we can do our work… So yes, she guides us… So, I think that's very good…. But I never get the impression that she really controls how we design it.“ (GP and everyone agreed)

“This can be done through consulting regularly, but also by agreeing on very clear things. So that everyone knows, that's my job, that's not my job. There must also be a continuous dialogue about this.” (nurse)

Allied caregivers were assigned additional, advanced care roles next to their core duties, such as drawing up care trajectories and conducting one on one consultations with patients. As a result, some roles of the GPs and allied caregivers had similarities and even overlapped in certain situations, which was experienced as time-saving, and increased interdependency between care providers.

"My main task is the care of chronically ill patients with COPD, diabetes, etc. In addition, I support the GP at busy times with the removal of stitches and blood tests." (nurse)

This was also the case with mental health and social workers.

"I was actually hired as a social case manager. I support people with psychosocial problems who need extra help, for example through intensive home visits. This gives the doctor more time to help other patients." (Nurse – social case manager)

Concrete agreements and written protocols were necessary to determine the quality of care. These protocols were drawn up by both GP's and allied caregivers and facilitated the performance of team meetings, medical interventions, and the organisation of the practices. According to care providers, an evaluation from an external consultant, who specialised in management and organisation, was beneficial to the development of protocols, and to guiding all team members equally. This external consultant engaged in order to evaluate the protocols provided feedback, and suggested adjustments if needed. Care providers were able to fall back on these protocols if they deviated from standard care in complex patient cases.

"The nurses also draw up protocols for the practice. They have the necessary knowledge and skills from their training for this. An outside physician evaluates and rewrites protocols for our practice four hours a week. This ranges from drafting a household e-mail to the injection technique of an insulin pen for a diabetic patient. This will then be sent back to us by email. Once you are up to date with the protocols, you are no longer dependent on colleagues …" (GP)

Theme 6: Shared decision making

Achieving consensus and resolution of conflicts

To facilitate decision-making processes between professionals, care providers developed decision-making protocols. These protocols were, in the first stage, developed with a selection of care providers depending on their profile, availability and motivation. After finishing the first draft, the protocol was presented to the remaining team members in a meeting. This way, every team member was in some way involved in every decision-making process and was able to give feedback or request adjustments if needed.

"About the decision making in your practice. How do you make decisions? (question) Answer: We have rolled out a plan with that working group, showing how we are going to approach this. That is a decision that we have made as a working group, but that is then fed back at a team meeting. Look, this is the plan we have, do you agree? So, it is not the case that you are involved in every decision, but an agreement is always requested, and feedback is also given." (GP)

"I think it is important that everyone can speak freely. I think it is very important in such practices that everyone's expertise is actually recognised (validated)…" (nurse)

According to care providers, in a decision-making process, it was important that every team member was able to speak up, and that everyone had the feeling that their expertise and input were respected equally. Having shared responsibilities and performing brainstorming about certain issues as a team was experienced positively by the care providers. On the other hand, they indicated that they wanted to retain a certain form of autonomy to make their own decisions.

"You actually have the opportunity to […] closely monitor the patient and make certain decisions about their care yourself. […] You work together and make decisions together. But you can also make independent decisions and I think that is really an added value." (nurse)

To facilitate decision-making processes, some care providers were advised to follow training. These care providers were given pieces of training to improve their communication skills, which had several advantages in conflict resolution.

"What did surprise me in my early days was that a lot of effort was put into communication skills. I can name several courses that I have followed here, about communication with colleagues, connecting communication. And at the moment you think, okay, this is something I can do now, can I use it or not. But when conflicts occur, it turns out to be useful that you followed that." (nurse)

Documenting agreements

When an agreement was reached after a decision-making process, care providers documented these agreements in a clear way and shared the documents with all participants, including colleagues who couldn't participate in the meeting. This way, they were able to refer to their agreements when necessary and evaluate their achievements in the long term.

“I think it comes down to making very good agreements. We come from different organisations, but we are also colleagues and just human beings. And yes, at the level of our small cooperation, I think that's the most important. And this team is doing well so far.” (GP)

Theme 7: Developing workgroups to tackle specific (local) problems.

In some practices, workshops were developed to solve problems in and around the settings. These care providers distinguished between workgroups directed towards care providers and workgroups directed towards their patients. They used these workgroups to develop medical policy plans or to solve problems in a patient-centred way.

“…so, the working groups that we have. These are based on what we think is needed for the practice. For example, (to develop) a medical policy plan. Now, we developed a new medical policy plan. And are waiting for a working group for sexual health and a working group for Advanced Care Planning (ACP). Because we notice that, for example, for unwanted pregnancies … in the practice, that contraception that that's not going well. And we have a low percentage of women who come in to give pap tests, so there's a need for that. So, then you start a working group.” (GP)

According to care providers, they were selective when choosing participants for the workgroups. They chose care providers who had the appropriate profile and background to solve the specific problems. Besides, they looked for motivated team members, who were interested in the topic and who were able to make the expected time investment. In every workgroup, they preferred to have a group leader who coordinated the team, performed role delegation and ensured that deadlines were met. To avoid ambiguities and to facilitate teamwork, they preferred smaller workgroups.

“Who is included in the working group is somewhat based on interest. So that's just being looked at in the team, who wants to commit to that. We consciously choose to always have a leader that keeps the overview. That ensures that things run smoothly and that tasks are delegated. We also choose not to make the working groups too large. Because of course, if you are in a working group with 10 people, then no decisions are made.” (GP)

Theme 8: How to work patient-centred?

In a patient-centred practice, the patient is invited and empowered to have a steering role in the care process. This means that the patient could, if he wished, be involved in the development of an interprofessional care plan. This enabled the inclusion of the needs and preferences of patients in the care plan. According to care providers, being present at a team meeting could be part of this but was not necessary. They indicated that care providers were able to represent the patient, though, they did think it was important that information-sharing with the patient was done clearly and strictly.

"What we regularly do is organize a multidisciplinary meeting. We bring the patient together with all care providers involved in that case. When we feel it is necessary to ensure that everyone is working towards the same goal. […] And the patient is always invited. I think that's an important tool in this story." (GP)

Next to medical care, some practices gave attention to providing or if not possible, referring patients to perform (social) activities. More specifically, they designed their practices to be patient-friendly and in some cases, they accepted coaches and specialists from different organisations to support them in person-centred care. However, practices which had no resources or space redirected their patients to external providers.

"We have something that we call a walk-in cafe, which can be used by several other people who have positive input, such as a coach who provides workshops on creativity, and positivity, … In small, accessible groups to coach persons who are lonely, or from the 'fourth world'… making Christmas cards, or smelling or tasting herbs, … This is a sort of a place in which people can participate in a very accessible way to gain information, …" (GP)

Theme 9: How to integrate a new team member?

Recruiting a new team member

Hiring the right personnel required significant time investment and effort for primary care practices. Overall, care providers were very strict when hiring new team members, and the candidates needed to fit the vision of the practice. They searched for care providers who were able to improve the practice and were ready to invest in caregiving. To do so, questions such as what is good care, how can we improve our practice, and how can you facilitate this improvement, were asked. During the job interview, candidates were informed about the strict requirements, the shared vision and the shared goals of the practice. In some cases, a candidate was not hired if he or she didn't fit with the vision of the practice.

“Anyone who comes to apply for a job with us knows that this is our vision and mission. And we also ask people who apply for a job, 'what do you think we are doing here?' who are the people we see here? How are you going to contribute to make that go better? It's going well, but how is it going to get better? We ask that very consciously. This means that you select people who are willing to invest in it (the practice).” (GP)

“We want to offer low-threshold/ accessible care. Anyone who comes to apply for a job with us knows that this is our vision. The applicant is asked how he or she will contribute to this. In this way we can select people who want to invest in the high-quality care that we try to offer.” (GP)

Moreover, in some cases, practices preferred to hire or collaborate with care providers living or who grew up in the neighbourhood. According to care providers, this facilitated the detection of regional/local problems and to work population-centred.

“Some of them are really local people, from the local community. Our youngest nurse was born and raised in the village. She goes out in the village, knows the people through and through.“ (GP)

Care providers indicated that mastering soft skills is as important as having professional knowledge and skills. When candidates had equal profiles and experiences when hiring new team members, having a flexible and open mindset towards each other was preferred in the practice. Furthermore, they indicated that being open-minded was required to maintain efficient teamwork.

“But with this employee I helped in the job applications … Actually, the three candidates, had the same kind of profile. But where do you start looking for: from whom I think that they can demonstrate a lot of flexibility and openness towards each other. That is something that is very much needed, a lot of consultation and openness and a lively attitude… So, the personality of the people also plays a role in that, in order to be able to build up a collaboration, I think.” (GP)

Whilst a selection of care providers got involved during the job interviews, the whole team was able to get in touch with the candidate after surpassing the first meeting. In this phase, all team members were involved, asked questions and were included in the final decision.

“... you don't do a job application procedure with 14 people. There is a fixed structure for it. The vacancy consists of what profile are you looking for, what are the things that should be seen with it, um ... then those application letters are screened by employees of the practice …They are all standard questions. What is your view on healthcare

today? And how do you see healthcare in 5 years and in 20 years?... Then the screening was done by everyone (all employees) on Friday." (GP)

Besides fitting the vision of the practice, and being open-minded, newly hired caregivers needed to have the capacity and the intention to collaborate. This was required to perform efficient teamwork and to be accepted as 'a new colleague'.

"When selecting […] new employees, we therefore look at the extent to which they agree with our way of working, which is formed by multidisciplinary collaboration. But also, whether they have the capacities to work together." (GP)

Approaching a new team member

According to care providers, just like choosing new team members, integrating new team members was not an easy task. Primary care settings deployed fixed structures (protocols) and strategies to facilitate the integration process of their new colleagues. In some practices, an intake process was organised by one team member (mostly practice assistants or coordinators) in which the new team member learned about the task distribution and the functioning of the practice. Afterwards, (depending on the profile of the new team member) other caregivers joined the in-take process.

"And then there is actually an intake procedure, in which, when they come, they are explained by the practice assistant about what their part of tasks is and how they should do it. And then (they see) the nurses and then the doctor. he also follows along with everyone, whether you are hired as a physician assistant or as a doctor." (nurse)

A caregiver which had recently started within the practice explained how she was integrated in the practice as follows: *"I think as a new employee you are also drawn into this. […] I received those policies before I started working here. Then I was able ask my questions to the coordinator. And then you are directly involved in the story of the things that are now given priority." (Nurse)*

The possibility to follow training based on personal needs and the needs of the primary care settings was experienced as important.

"But I think that's a very important thing… for further training or at least in certain themes with which I am less confronted with my main job, or how should I say it: where do I still need help, necessary to keep the quality as good as possible within the needs of the practice. I also find it something very important for myself." (Nurse)

Theme 10: Getting ready to implement the IPCI toolkit

A mix of interventions

According to the participants of the co-design workshops, we need to develop a toolkit with a broad scope, and it should be a mix of interventions. They think that the interventions will not antagonize each other, but it may be beneficial to prioritize some interventions, or to have a chronological order when implementing the interventions. The toolkit should be 'dynamic' or adjustable depending on the needs of the practices, care providers and patient. This means that the toolkit is designed in such a way, that it can be strengthened with new tools, without interfering with the existing tool or interventions.

"Interventions to get to know each other … that seems to me to be the first important building block to start from… Also getting to know each other's expectations, but also being able to properly map out the request for help or the needs from the patient population. Tools/interventions that can emphasize that, are actually very important. And the rest will come naturally. Based on the complexity of the needs (of patients), I think it will always be a mix of interventions." (WS 7 and 8)

Theory to practice

The co-design workshop participants think that analysing international literature on implementation of interventions is beneficial to provide content for the toolkit. However, they indicated that we should analyse the Flemish context first, to identify the needs, and preferences of practices, care providers, and patients and their families. In addition, these concepts should be adapted in an appropriate way, to the Flemish concept before included in the toolkit. Without this adaption process, they cannot be adopted or implemented successfully.

"Literature is very important, but when you implement it [the tool], you definitely have to look at the context. First you need to make an analysis of; in which team, in which context do we want an improvement and on what? And then look at how literature can contribute. For me it is important to start from a concrete need (from the local context), and only then look at literature. And not vice versa…." (WS 3 and 4)

Enabling the implementation of the toolkit

This theme emerged fully from last two sessions of the co-design workshops. Due to an intrinsic motivation, the practices are expected to be more inclined to implement the toolkit properly in their practices. In addition, it was indicated that fewer participants will drop out compared to practices with an extrinsic motivation. This means that practices that benefit from implementing this toolkit will be more likely to continue doing so.

Ownership seems also very important in this context. Practices and caregivers who participate in the implementation of a toolkit should feel that they are part of the project. Their ideas, problems and complaints must be heard. Care providers must be properly guided during the implementation process. Letting them go completely free during a pilot stage was not recommended by the participants. There must be ways (e.g. feedback loops) to maintain contact with the participating practices. Later on, these feedback loops could become part of the toolkit.

The participants of the co-design workshops find coaching in implementing the toolkit very important. Several strategies were mentioned for this. A presentation by the researcher providing more information about the toolkit and interim information moments at the request of the participating teams or individuals could be enlightening and can also facilitate implementation.

THE IPCI TOOLKIT

Who can use this toolkit?

Based on the study results outlined above, we developed a generic toolkit that can be used by all types of care providers and teams in different primary care settings.[41] Both caregivers working under one roof or in close collaboration and caregivers working at different locations can use this toolkit to improve teamwork. The toolkit has eight sections (Table 8), and every module of the toolkit starts with a section in which the concepts and principles used in the toolkit are clarified. All modules are available in a printable PDF format.

The modules are introduced with illustrative quotes from patients and caregivers, generated in the development stages. The caregivers can choose which modules they use or not, based on their needs, and preferences. This is necessary since we developed a generic toolkit considering the different contexts of each team as an opportunity to reflect and as a process of identifying problems and solutions. When using the toolkit, the care providers remain in control of the entire care process. The tools we make available serve as a facilitator in collaboration and are designed to guide care providers towards an integrated care. We will now zoom in on each of the sections. (Table 8)

Module 1: A self-assessment tool to measure working conditions, psychological safety, interprofessional collaboration, and bio-psychosocial working from the perspective of the care provider.[22, 46-48]

After performing several discussions on how to assess interprofessional collaboration, we concluded that we needed a broad approach. Instead of developing a new measurement tool assessing interprofessional collaboration only, we decided to use a mix of existing, freely available, validated instruments to measure collaboration broadly. First, we will collect sociodemographic data and professional characteristics of the care providers. Afterwards, we measure their health condition, working conditions and job satisfaction. (see Table 9)

Secondly, we measure their teamwork through the following three scales: The bio-psychosocial scale (BPSS)[47], the scale for psychological safety[22], assessment of interprofessional team collaboration scale (AITCS)[46], which are listed in Table 10.

With the help of these assessment tools, we will map out the situation of care providers and their teams from a broad perspective: to what extent are they and their teams engaged in interprofessional collaboration and integration in primary care.

Module 2: Preparing care providers to implement the toolkit by teaching them the importance of teamwork and teaching them the basic principles of collaboration.

The toolkit aims to facilitate efficient collaboration between care providers. We learned that to facilitate the implementation of the toolkit, care providers should be prepared by adopting some basic principles of collaboration and teamwork. Based on the interviews and workshops, the following principles of S3 corresponded the most to the caregivers' needs and preferences. Besides, incorporating the implementation of a toolkit in the goals and vision of settings is an important facilitator to implementing the IPCI-toolkit. (See table 11)

The following attitude is recommended while performing teamwork of team meetings. Constantly ask yourself the question: Is my behaviour or attitude the most valuable contribution to the effectiveness of this collaboration? This can mean: keeping silent, interrupting, objecting or even breaking agreements.

Module 3: Enhancing psychological safety

Having a psychologically safe environment seemed to be a precondition to achieving or maintaining efficient teamwork. To improve psychological safety in practices, we introduced a module that includes the following subthemes: (i) be inclusive, (ii) lateral hierarchy, (iii) be open-minded, (iv) have trust, (v) enhance open communication, (vi) be patient, (vii) show respect, (viii) show confidence, and (ix) be comprehensive.

In this module care providers will learn how to enhance an open culture, and they will be able to talk about their problems and mistakes without feeling threatened, which is a precondition for providing 'good care'.

Module 4: Consultation techniques

The care provider longed for structured consultation moments, in which these moments were used optimally in terms of efficiency and effectiveness. Based on the findings of our study, we developed a module incorporating the following subthemes: (i) preparing for a meeting, (ii) performing a basic team meeting with caregivers under one roof, and (iii) building networks between caregivers originating from different settings, (iv) how to organise a speed meeting, (v) Evaluating a team meeting.

In this module, some basic principles are indicated:

- Instead of centralizing all power, it is distributed among the different team members.
- There is a task distribution, which makes it clear who decides what.
- The team members are autonomous, but keep relying on each other.
- The team members' preferences and their range of tolerance are determined. Between the preferable and the unacceptable lies the tolerance range of humans. By working within this tolerance range, a team can optimize the search for flexibility and perfection.

Module 5: Shared decision-making and achieving consensus

Healthcare providers who work together must also make decisions together. This can concern decisions about the organization of the practice, patient issues, or other practical matters.

During team meetings, ideas are proposed that may clash with the vision of one or more team members. These disagreements are often resolved quickly, but in some cases can have major consequences for team collaboration. It is important to check whether the objections of the team members are strong enough to count as an objection. In this part, we provide a module to guide caregivers to deal more efficiently with the concerns of team members, make joint decisions and document agreements. A template is provided to document agreements. (See attachment) To realize such cooperation, a common language has to be found between the care providers.

In this decision-making process, all parties should be involved, whereby the patient and his/her environment are central.

Module 6: Developing workgroups to tackle specific (neighbourhood) problems.

Healthcare providers are involved in various processes, inside and outside their setting. Although these processes often go well, problems can occur. Our study shows that many of these problems have already been identified by health care providers, but are not being addressed. These appear to be problems that cannot be solved individually, but which require a team approach. We determined the development of workgroups, which were an effective strategy to tackle specific (local/neighbourhood) problems.

In this module, we provide caregivers with a five-step approach to tackle these care or neighbourhood problems, starting from: you have identified a problem and you understand that you cannot solve this problem on your own. How are you going to handle this?

The five steps:

- First, check if a team member is already working on solving that problem.
- Find out who is involved in, and/or affected by this issue.
- Make yourself a shortlist of colleagues who may be able to participate.
- Motivate your colleagues to participate by explaining what's in it for them.
- What do your colleagues expect from you and what contribution can you expect from them?

Each of these steps is further explained in the IPCI-toolkit.

Module 7: How to work person-centred and population-centred?

Person-centred care is treating a person/patient in an honourable and respectful manner, and involving hem in all decisions made in the care he/she receives.

By working in a more person-oriented way, the caregiver can provide better care to the patient and his/her environment. According to caregivers, patients expect the caregiver to see them as a partner in care and hope that their needs, preferences and experiences will be taken into account. Giving patients a say in the care and treatment they receive, can be beneficial for their care process. As a result, patients will be better informed and have an improved adherence to the therapy. In addition, a better relationship between the healthcare provider and patient will be achieved.

We provide a module for caregivers to collaborate with the patient and his/her family and environment.

Module 8: How to integrate a new team member?

In this module, we developed seven steps to guide practices in the integration of a new team member: (i) preparation for the arrival of a new colleague, (ii) welcoming a new colleague, (iii) taking initiative and introducing the new team member, (iv) clarifying your team's vision, values, goals and priorities, (v) explain how the roles and associated responsibilities are distributed, (vi) take advantage of the lunch breaks, (vii) make it clear that the new team member can contact any caregiver with all his/her questions.

DISCUSSION

The two-year development process resulted in a 38 paged, generic, Dutch toolkit. It is a manual adapted to the concepts and framework of Sociocracy 3.0 and psychological safety. It consists of eight modules: (i) self-assessment tool, (ii) improving team readiness and acceptance towards the use of a toolkit, (iii) improving psychological safety, (iv) consulting techniques, (v) shared decision making, (vi) developing working groups around specific problems, (vii) how to work person and population centred, and (viii) how to integrate a new team member. The toolkit intents to help caregivers coordinate their care and improve the communication between various health actors, patients, (in)formal caregivers, and families.

Self-evaluation was considered a way to assess team performance and to identify specific issues on collaboration and team integration. By providing them the right assessment tools, care providers can identify their shortcomings, detect areas for improvement and start looking for solutions. Moreover, identifying the issues regarding collaboration were preconditions for better teamwork. We found that the main influential factors were (i) the understanding of the necessity of interprofessional collaboration, in agreement with Reeves et al.[49], and (ii) the explicit presence of shared vision and goals, in agreement with Johnson et al.[50] . Our research also revealed this shared vision should be revised periodically. These updates should reflect the evolving needs and preferences of the practice and its care providers incorporating the views of patients and their families. However, this is not included in the tool.

In our study, psychological safety, having a safe team climate, helped care providers to achieve a lateral hierarchy, to have trust in each others' competencies, and to have an open culture. According to Edmondson et al.[23], this psychologically safe environment is a prerequisite for teamwork and Dieckmann et al.[51] add that it facilitates practice innovation. In our study, the psychological safety of patients and/or their families during consultations or treatments was not explicitly mentioned in contrast to the findings of Hunt et al.[52] in mental health services.

Inspired by the Sociocracy framework, a variety of consultation, and decision-making techniques have incorporated such as formal and informal meetings, speed meetings, meetings with various organizations/practices, and conflict resolution techniques. During these meetings, the organisation of the practice, patient issues, or other practical matters were discussed. Although care providers agreed that the patient should be considered as a full partner, they were not present at these meetings. Van Dongen et al.[53] indicated that patient participation in interprofessional team meetings was appreciated by professionals and patients, however, support and readiness for the meetings was needed. According to Rollet et al.[54], patient participation was associated with better treatment, longer survival, improved trust and compliance with the treatment.[55] Our research presented that the patient participation could be strengthened by having a patient-centred care approach, where the patient is treated in a sincere and respectful manner, and in which the patient is involved in all decisions made in the care he/she receives.

To tackle specific or local problems, care providers in our study indicated they sometimes use workgroups. This development process started with first identifying the problems occurring in and around their practice. Secondly, they searched for suitable team members who were capable of solving these problems. They also facilitate population-based working, which is, according to Kringos et al.[5] relevant for prevention and a more integrated collaboration within the public health sector.

Currently, practices are facing a shortage of healthcare workers and fragmentation. Moreover, new team members experience various issues and inefficiencies while integrating in the team. To avoid these issues, and to optimize the use of resources, we introduced, inspired by Ellis et al.[56], seven steps to guide and support practices in the integration of a new team member.

This study has several strengths which will be explained in this paragraph. We ran a bottom-up multi-staged trajectory, including the views and opinions of more than 120 practitioners, professionals, academics, and patient representatives. Performing a combination of in-depth interviews and focus groups in general practices, and mental health organisations, allowed us to collect data from different types of professionals, working in different types of primary settings. Subsequently, the co-design workshops gave us the opportunity to analyse and evaluate our findings with a larger group, and it allowed us to maintain an interprofessional approach while analysing and evaluating our findings. We chose to use triangulation, as many researchers and practitioners of different backgrounds and primary care settings analysed and evaluated our findings along the way. This reduced the risk of bias and added to a broader applicability of the toolkit.

There are several potential limitations to this study. Given the complexity of interprofessional collaboration and the changing environment in primary care, this toolkit may not have covered all issues in the broad context of Flemish primary healthcare. In addition, since all data is collected in primary care settings in Flanders and mostly with care providers working in a mono or multidisciplinary group practices. Therefore, the findings may not be generalizable to other regions, other levels of healthcare and solo practices. The literature has established that researchers can influence the interpretation of data, and despite our methodology in which we made efforts to reduce bias, it is common in qualitative research that the presence of a researcher influences the interpretation of the data.[6] To address this problem, Lincoln and Guba (1985) indicated the following four general criteria in their approach to trustworthiness: credibility, transferability, dependability, and confirmability.[57, 58] Since our self-evaluation tool is directed to care providers, this might not enable the identification of problems experienced by patients or clients. Validated instruments such as Patient Reported Experience Measures (PREMS)[59, 60] and Patient-Reported outcome Measures (PROMS)[61, 62], are available but these were never used by the care providers who participated in our study. However, Black et al.[63] indicated that the use of these measures could help with transforming practices, and Wolff et al.[64] mentioned that it facilitated patient-centred care. Next to limitations, this study has also several strengths. This risk of bias was minimised by triangulating researchers from different backgrounds (e.g. nurses, pharmacists and a psychologist) through the whole process. This triangulation, intensive cooperation and inductive process increased the credibility and reduced the risk of bias to the interpretation of the data based on preconceived understanding and personal opinions. Previous to this research, a literature review of existing strategies and interventions was performed by the same researchers. This ensured that the researchers were aware of existing strategies, toolkits and interventions so they made use of them. Unlike the interventions identified in this literature review, the development process, research data is provided in this paper, and the full toolkit is attached as an appendix. In addition, by organising co-design workshops with a very broad group, the researchers were able to develop a toolkit that takes into account multiple perspectives.

Though very complex in nature and sometimes difficult in practice, interprofessional collaboration seems to be a prerequisite for integrated care. It benefits quality of care when it is based on the needs and preferences of practices, care providers, and patients and their families. We expect that this toolkit will need to be adapted, improved, as well as extended in the coming years, based on the changing landscape of primary care or new insights gained form more research. Hereby, a new study is set up by the same research team to evaluate the usability and efficacy of the toolkit, and subsequently modify the toolkit based on the research findings.

CONCLUSION

In this paper, we describe the multiyear co-development process of a generic toolkit for the improvement of interprofessional collaboration. Inspired by a mix of interventions from in and outside healthcare, a modular open toolkit was produced that includes aspects of Sociocracy, concepts as psychological safety, a self-assessment tool and other modules concerned with meetings, decision making, integrating new team members and population health. Upon implementation, evaluation and further development and improvement, this compounded intervention should have a beneficial effect on the complex problem of interprofessional collaboration in primary care.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Author contributions

All listed authors meet authorship criteria and no others meeting the criteria have been omitted. The following role distribution was given to perform the research: (1) development of the research question and establishment of the research strategy: MMS, HDL, KdV, KVdB and PVB, (2) data collection: MMS, HDL, KdV, KVdB and PVB, (3) data analysis: MMS, HDL, KdV, KVdB and PVB, (4) discussion construction: MMS, HDL, KdV, KVdB, PVR, PP, KD, EV, RR and PVB, (5) writing-review and editing: MMS, HDL, KdV, KVdB, PVR, PP, KD, EV, RR and PVB. Finally, MMS and PVB are the guarantors of this research.

Funding

This work was funded by the King Baudouin Foundation and Fund Daniel De Coninck. The funding bodies had no role in study design, data collection, analysis, data interpretation or writing the manuscript. Grant number: 2019-J5170820-211588.

Acknowledgments

We are grateful for the partnership with the Primary Care Academy (www.academie-eerstelijn.be) and want to thank the King Baudouin Foundation and Fund Daniel De Coninck for the opportunity they offer us for conducting research and having an impact on the primary care of Flanders, Belgium. This article was written on behalf of: consortium of the Primary Care Academy consisting of Lead author: Roy Remmen–roy.remmen@uantwerpen.be—Department of Primary Care and Interdisciplinary Care, Faculty of Medicine and Health Sciences. University of Antwerp. Antwerp. Belgium; Emily Verté—Department of Primary Care and Interdisciplinary Care, Faculty of Medicine and Health Sciences. University of Antwerp. Antwerp. Belgium, Department of Family Medicine and Chronic Care, Faculty of Medicine and Pharmacy. Vrije Universiteit Brussel. Brussel. Belgium; Muhammed Mustafa Sirimsi—Centre for research and innovation in care, Faculty of Medicine and Health Sciences. University of Antwerp. Antwerp. Belgium; Peter Van Bogaert—Workforce Management and Outcomes Research in Care, Faculty of Medicine and Health Sciences. University of Antwerp. Belgium; Hans De Loof—Laboratory of Physio pharmacology, Faculty of Pharmaceutical Biomedical and Veterinary Sciences. University of Antwerp. Belgium; Kris Van den Broeck—Department of Primary Care and Interdisciplinary Care, Faculty of Medicine and Health Sciences. University of Antwerp. Antwerp. Belgium.; Sibyl Anthierens—Department of Primary Care and Interdisciplinary Care, Faculty of Medicine and Health Sciences. University of Antwerp. Antwerp. Belgium; Ine Huybrechts—Department of Primary Care and Interdisciplinary Care, Faculty of Medicine and Health Sciences. University of Antwerp. Antwerp. Belgium.; Peter Raeymaeckers—Department of Sociology, Faculty of Social Sciences, Faculty of Social Sciences. University of Antwerp. Belgium; Veerle Buffel- Department of Sociology; centre for population, family and health, Faculty of Social Sciences. University of Antwerp. Belgium.; Dirk Devroey- Department of Family Medicine and Chronic Care, Faculty of Medicine and Pharmacy. Vrije Universiteit Brussel. Brussel.; Bert Aertgeerts—Academic Centre for General Practice, Faculty of Medicine. KU Leuven. Leuven, Department of Public Health and Primary Care, Faculty of Medicine, KU Leuven. Leuven; Birgitte Schoenmakers—Department of Public Health and Primary Care, Faculty of Medicine, KU Leuven. Leuven. Belgium; Lotte Timmermans—Department of Public Health and Primary Care, Faculty of Medicine, KU Leuven. Leuven. Belgium.; Veerle Foulon—Department of Pharmaceutical and Pharmacological Sciences, Faculty Pharmaceutical Sciences. KU Leuven. Leuven. Belgium.; Anja Declerq—LUCAS-Centre for Care Research and Consultancy, Faculty of Social Sciences. KU Leuven. Leuven. Belgium.; Nick Verhaeghe—Research Group Social and Economic

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Data Availability Statement

The datasets in this article are not readily available because restrictions apply to their availability, as they were used under ethical permission for the current study. Requests to access the datasets should be directed to the authors.

Ethical statement

Approval was obtained from the Ethical Committee of Antwerp University Hospital with the file number 20/38/477. The study was in accordance with the principles outlined in the Declaration of Helsinki. The participants received verbal and written information about the purpose and methods of the study. The informed consents were approved by the above-mentioned Ethical Committee. Participants were informed that participation was voluntary, and that confidentiality would be ensured.

Tables and figures

Workshop characteristics	
# Sessions	8 workshop sessions
Average duration	90 min – 150 min/ session
# Organisations	Universities: 4 University colleges: 5 Patient association: 1 (Home) nursing organisation: 1
Total # participants	40 participants + presenter + moderators
Profiles	General practitioners (GP's), nurses, physiotherapists, social workers, sociologists, psychologists, pharmacists, and dieticians
Occupation	Academics, lecturers, practitioners, and patient representative

Table 1: Overview of co-design workshop characteristics

Setting	General practice	Mental health care
Interviews	5 in-depth interviews 1 focus group	6 in-depth interviews 1 group interview
Total duration interviews	321 minutes	412 minutes
Number of settings	4 practices	4 practices
#Participants	36 caregivers	10 caregivers
Education	GP's: 6 Nurses: 28	Psychologists: 7 Psychologist + sexologist: 1 Applied psychologist: 2
Role in the team	/	Leaders: 4 Frontline professionals: 6

Table 2: Overview of research characteristics in stage 1

Workshop 1	**Topic: Content development IPCI-toolkit**
	Date: 29 May 2020
	Participants: 6
	Background participants: Physiotherapists (N= 1), dietitians (n=1), nurses (n= 2), nurse/gerontologists (n=1), GP's (n=1), social workers: n=1)
	Questions: • When is a team an added value for providing optimal care? • Give 1 example of an intervention that affects team functioning? • How can we ensure that the patient is included in this collaboration? What's in it for the patient from this collaboration? • How to inform the patient that he/she is being treated by a team?
	Expected outcomes: • An estimate of the intervention needs to improve interprofessional collaboration and integration in primary care • Strategies: ○ to develop a toolkit, beneficial for the patient. ○ To inform the patient about the collaboration and coordination of their care team

Workshop 2	**Topic: Outcomes and instruments to measure IPCI**
	Date: 5 June 2020
	Participants: 4
	Background participants: physiotherapists (n=1), nurses (n=1), GP’s (n=1), members of the Flemish patient association (n=1)
	Questions: • Which aspects should we measure as a matter of priority within the model of the Quadruple Aim (patient, population, care provider and cost-efficiency) to gain insight into the degree of quality of interprofessional collaboration and integration and which instruments can we use for this? • Which PROMs/PREMs are available to measure outcomes on health and well-being in primary care? Can these measurements be used to score the entire team? • How can we measure interprofessional collaboration and integration from the patient's point of view? And how does this relate to the self-assessment of a team? • Which outcomes indicate the relationship/connection of interprofessional teams with the community/environment? Which instruments can we use to measure this? • Which techniques prevent 'gaming' of outcome measurements? Give 1 piece of advice. Gaming = (Sub)consciously choosing for one's advantage at the expense of efficient and effective patient-oriented care.
	Expected outcomes: • Appropriate outcomes and instruments to measure IPCI in primary care settings. • Content for a toolkit, which can bring measurable changes to teamwork. (IPCI) • Strategies to transform, adapt, and adopt knowledge from international literature, which could be used as input for the toolkit. • Strategies to maintain a patient-centred approach and avoid bias and gaming.

Table 3: Overview of the co-design workshop sessions: topic, date, number of participants, background participants, and the questions

Setting	**General practice**
# Interviews	2 in-depth interviews 3 focus groups
Total duration interviews	316 min
# Practices	4
# Caregivers	19 caregivers
Occupation	GP's: 8 Nurses: 6 Physiotherapists: 1 Medical secretary: 1 GP trainee: 1 Psychologists: 1 Social workers: 1

Table 4: Overview of research characteristics in stage 2

<table>
<tr><td rowspan="5">Workshops 3 and 4</td><td>Topic WS3: Determining appropriate interventions
Topic WS4: Development and adjustment of the toolkit</td></tr>
<tr><td>Date: 23 November 2020 and 26 November 2020</td></tr>
<tr><td>Participants: 8 and 4</td></tr>
<tr><td>Background participants workshop 3: member of the Flemish patient association (n=1), GP's (n=2), physiotherapists (n=1), nurses (n=1), dietitians (n=1), sociologists (n=1), nurse/gerontologists (n=1)

Background participants workshop 4: GP's (n=1), Nurses (n=2), social workers (n=1)</td></tr>
<tr><td>Questions workshop 3:

What is your opinion on this statement? A measurement tool from the study, which characterizes team collaboration, can also help with a team 'self-diagnosis' and the selection of possible interventions.
Rank these interventions in importance
Which interventions can be combined? Which combination of interventions yields synergies? Which interventions antagonize each other?
What is your opinion about these statements regarding the implementation in Flanders based on interventions that we know from literature?
We have to be very careful about this: we may be trying to solve problems that don't exist here!
</td></tr>
</table>

	- Just do it, despite implementation issues: because this puts the finger on the wound and is, therefore, part of the problem to be solved.
	Expected outcomes workshops 3 and 4 - Determining appropriate interventions and tools to improve IPCI in primary care - Developing content: Identifying influential factors of IPCI, according to primary care professionals. - Determining which interventions or tools are (not) compatible, and synergic when used together. - Developing content: Identifying strategies to transform, adapt, and adopt knowledge from international literature. - Development of a self-assessment tool
Workshop 5	**Topic: Discussing a first draft of the toolkit**
	Date: 21 January 2021
	Participants: A total of 4
	Background participants: Nurses (n=2), pharmacists (n=1), psychologists (n=1).
	Questions: - When can we call this toolkit a success? - Can we use short recordings/videos to introduce the modules in the toolkit? - How can we facilitate the implementation of the toolkit? - What if the practices are already implementing a toolkit or intervention? What does this mean for our interventions? - How should the toolkit be structured to generate sufficient data? - How can we structurally monitor the participating teams? - What difficulties/pitfalls does the introduction of a dashboard entail? - How do we deal with non-participation or stagnation of the process? - Is a backup plan necessary?
	Expected outcomes: - Discussing whether the first draft of the toolkit is suitable to improve IPCI in primary care. - Identifying strategies to implement the toolkit in a longitudinal study. - Identification, prediction, and preparation for potential problems, and obstacles in the implementation process.
Workshop 6	**Topic: Discussing the second draft of the toolkit**
	Date: 19/08/2021

	Participants: 5
	Background participants: Policy makers (n=1), GP's (n=1), dietitians (n=1), social workers (n=1), nurses (n=1)
	Questions: • Are these tools suitable to strengthen interprofessional collaboration and integration in primary care? (Which are/not?) • How can we facilitate the implementation of this toolkit? • How should the toolkit be structured to generate sufficient data? • Are the measuring instruments determined for the self-evaluation suitable? Expected outcomes: • Discussing whether the second draft of the toolkit is suitable to improve IPCI in primary care. • Identifying strategies to implement the toolkit in a longitudinal study. • Strategies to upgrade the toolkit, based on data from the self-assessment tool.

Table 5: Overview of the co-design workshop sessions: topic, date, # participants, background participants, and the questions

Workshops 7 and 8	**Topic: Preparing for the next stage: implementation, and evaluation of the IPCI-toolkit**
	Dates: 11/10/2021 and 18/10/2021
	Participants workshop 7: n= 6 participants Participants workshop 8: n= 3 participants
	Background participants workshop 7: GP's (n=1), policy makers (n=1), dietitians (n=1), sociologists (n=1), nurses (n=2) Background participants workshop 8: GP's (n=2), Social workers (n=1)
	Questions: • How do you define a team and what determines whether a team is well attuned to each other? • How can we design the pilot toolkit based on data from the self-assessment tool? • How can we motivate healthcare providers to start with the toolkit and which steps can be taken to maintain this motivation and prevent the drop-out of practices or teams? • How do we deal with fluctuating or changing teams? • What can go wrong during the implementation of the toolkit?

	- What about intellectual property? And what steps should we take to valorise the toolkit?
	Expected outcomes: - Definition of 'good' teamwork or a good collaboration. - Definition of well-matched team members. - Strategies to upgrade the toolkit, based on data from the self-assessment tool - Identification, prediction, and preparation for potential problems, and obstacles in the implementation process.

Table 6: Overview of the co-design workshop sessions: topic, date, # participants, background participants, and the questions

Themes	Subthemes
Theme 1: Importance of interprofessional collaboration	N/A
Theme 2: The need for a self-assessment tool to measure team performance	N/A
Theme 3: Preparing a team to use the toolkit	Developing a shared vision Developing shared goals
Theme 4: Enhancing psychological safety	Achieving a lateral hierarchic structure Having trust in each others' competencies and skills Having an open-culture
Theme 5: Developing and determining consultation techniques	Organising team meetings Informal team meetings Formal team meetings Digital meetings Building networks between care providers originating from different settings Coordination and role distribution
Theme 6: Shared decision-making	Achieving consensus and resolution of conflicts Documenting agreements
Theme 7: Developing workgroups to tackle specific (local) problems	N/A
Theme 8: How to work patient-centred?	N/A
Theme 9: How to integrate a new team member?	Recruiting a new team member Approaching a new team member
Theme 10: Getting ready to implement the IPCI toolkit	A mix of interventions Theory to practice Enabling the implementation of the toolkit

Table 7: An overview of the themes and subthemes extracted from the development process

Module	Topic	Outcome
1	A self-assessment tool to measure working conditions, psychological safety, interprofessional collaboration, and bio-psychosocial working from the perspective of the care provider.	Measuring: Working conditions, Psychological safety, Interprofessional collaboration, Bio-psychosocial working
2	Preparing care providers to implement the toolkit by teaching them the importance of teamwork and teaching them the basic principles of collaboration	Team readiness and acceptance toward IPCI
3	Teaching care providers the importance and the basic principles of psychological safety.	Changing the attitude of caregivers
4	Consultation techniques: • How to prepare for a team meeting? • How to organise a team meeting with persons working under one roof? • How to develop a network between persons from different settings? • How to organise a speed meeting? • How to evaluate a team meeting?	Improving different types of team meetings
5	Improving shared decision making: • How to deal with concerns/objections from your team members? • How to solve the concerns/objections of your team members? • You have an agreement, what now? A simple template to document your agreements.	Integrating & implementing shared-decision making in teams
6	Developing workgroups around specific/local problems	Problem-solving. (In setting and regional)
7	Working patient and population centred	Thinking patient-centred.
8	Integrating a new team member	Optimal integration of skills and competences

Table 8: ‘Building blocks’ of the IPCI-toolkit

Theme	Source
Sociodemographic characteristics	European Social Survey[65] (adapted to our needs)
Professional characteristics	Primary Care Academy
Health-related questions	European Social Survey[65]
Working conditions and job satisfaction	6th European Working Condition Survey[48]

Table 9: Overview of scales to measure sociodemographic characteristics, professional characteristics, health-related questions, working conditions and job satisfaction

Scales		Source
Bio psycho-social scale (BPSS)		Van de Velde, et al., 2016;[47] De Vriendt et al, 2018[66]
Scale for psychological safety		Edmondson et al., 1999 [22]
Assessment of interprofessional team collaboration scale (AITCS)		Orchard, et al., 2012[46]

Table 10: Overview of scales to measure bio-psychosocial working, psychological safety and interprofessional collaboration

Principle	Meaning
Transparency	Make information available for the whole organisation unless it is confidential.
Equality	Involve people when making agreements of evaluations.
Consent	Give, search and integrate objections to decisions and actions.
Accountability	React when it is needed and take responsibility to keep your organisation on track.
Empiricism	Check all assumptions constantly by experimenting and evaluating your collaboration
Effectivity	Only invest time in those things that bring you closer to achieving your goals.

Table 11: Basic principles of Sociocracy 3.0, adapted based on data from our research.

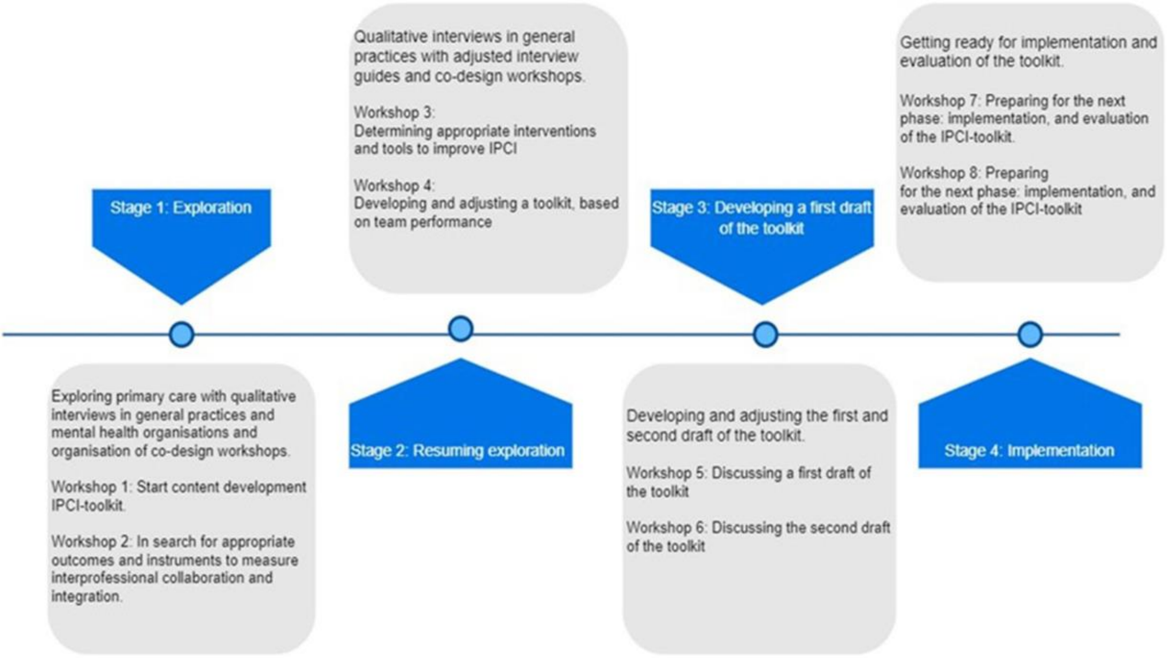

Figure 1: An overview of the two-year development process of the IPCI-toolkit* existing of four stages: exploration, resuming exploration, developing a first draft of the toolkit, and implementation. *IPCI, Interprofessional collaboration and integration in primary care.

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Chapter 7: General Discussion

Summary of the main findings and reflections on the methodology and existing literature

Three primary objectives were set when initiating this study: (i) identify the barriers and facilitators as well as success factors and good practices of interprofessional collaboration and integration at micro-, meso- and macro-level to optimise and sustain person-centred and population-based primary care, (ii) develop a roadmap with recommendations for interprofessional collaboration and integration to optimise and sustain person-centred and population-based primary care, and (iii) identify and develop building blocks for educational and practical modules, focusing on enhancing interprofessional collaboration and integration for primary care professionals and other stakeholders. Furthermore, this dissertation aimed to better understand interprofessional collaboration and integration (IPCI) in primary care.

Throughout the project, we adopted a scientific approach which allowed and accommodated multiple perspectives. Furthermore, the more we explored the topic, multiple changes were needed to the research questions to fulfil our research needs. For that reason, we decided to develop new research questions which were more specified, and enabled us to better address the research topic and objectives. In addition, the long-term implementation and evaluation of the toolkit is reserved for subsequent research.

To meet our research objectives, a literature review was performed and patients, care providers, academics and policymakers were identified as suitable groups for data collection. The project was divided into two stages: the first stage was the exploration phase, which is covered in Chapters 2-5, and the second stage was the development phase (Chapter 6). In the general discussion, each phase is clarified in three steps: (i) reflection on the methodology, (ii) main findings, and (iii) comparison with existing literature. To gain a comprehensive understanding of our findings, we recommend delving into chapters 2-6. By performing multiple research, with a variety of methodologies and samples, we tried to answer all research questions throughout the chapters of this dissertation.

Phase 1: The exploration phase

We conducted four studies to gain more insight into the experiences, preferences and needs of patients, care providers and policymakers regarding IPCI in Flanders. We also examined the current strategies and interventions to enhance IPCI in primary care (PC). Based on the findings of this phase, we proceeded to the development phase.

Diving into the literature

We initiated our research by conducting a scoping review to explore methods and strategies that improve IPCI in primary care[1]. This review enabled us to identify, categorise, and leverage existing approaches that could potentially be implemented in the Flemish context. Additionally, it allowed us to identify gaps in the existing research, guiding our project's subsequent steps.

Based on the findings of the scoping review, we identified five categories of strategies and interventions (i) Acceptance and team readiness towards collaboration, (ii) acting as a team and not as an individual; (iii) communication strategies and shared decision-making, (iv) coordination in primary care, and (v) integration of caregivers and their skills and competences. These categories are aimed at improving interprofessional collaboration and integration in primary care. One crucial prerequisite for enhancing and sustaining efficient interprofessional collaboration was the acceptance and readiness of the teams involved. Collaboration necessitated a shift in attitude, involving the recognition and appreciation of team members. Developing shared principles, such as a shared vision, values, and common objectives, emerged as a facilitating factor to foster and maintain collaborative behaviour. This appears to be important not only for primary care, but also for other levels of care[2-4]. The study emphasized the importance of psychological safety and a secure work environment in fostering effective teamwork, underscoring the need to establish a safe team climate[5]. Psychological safety within a team refers to a shared belief that it is safe for members to take interpersonal risks. This means that team members feel confident in expressing their ideas, asking questions, raising concerns, or admitting mistakes without fear of punishment or humiliation[6]. Lack of psychological safety can impede proper collaboration, underscoring its status as a necessary yet insufficient condition for enhancing interprofessional collaboration and workplace effectiveness[7-9].

In general, the review revealed a scarcity of strategies and methods aimed at enhancing collaboration in primary care. Existing interventions (see chapter 2 for these interventions) often focus on specific aspects of interprofessional collaboration, intervening on one of the themes such as coordination, cooperation, or communication. Our review focuses solely on primary care research conducted in high-income countries. As a result, our findings may not be directly applicable to other countries and healthcare levels due to differences in health systems, financing, governance, title protection, and culture, which can present significant challenges to implementation. The risk of bias in selection of articles was minimised by working with a team of at least two researchers and interpretation bias was minimised by triangulating researchers from different backgrounds (e.g. nurses, pharmacists and a psychologist) throughout the whole review process.

Throughout our research, we did not encounter a single strategy or intervention that was sufficiently comprehensive or adaptable to suit all types of primary care settings. Furthermore, we noted that a majority of the studies examined mental healthcare, social care and medicine as separate entities. Consequently, we determined that a combination of existing strategies and interventions, which we refer to as "building blocks," could be valuable for developing a generic intervention applicable across various settings and levels of primary care. Given the lack of comprehensive and universal solutions in the healthcare literature, we considered the adaptation and adoption of strategies, concepts, and interventions from outside the healthcare domain into the context of primary care. The outcomes and conclusions derived from this scoping review form the foundation for our subsequent research, which will be discussed later in this section.

Exploring the experiences, needs and preferences of the patient.

During the scoping review, we concurrently initiated multiple studies and collected data from various sources, including patients, academics, caregivers, and policymakers. To gain deeper insights into patients' experiences, needs, and preferences, we conducted a qualitative study using a phenomenological hermeneutical approach, following the method proposed by Lindseth and Norberg[10]. By combining phenomenology and hermeneutics, we were able to understand the meaning of the experiences of people living with chronic conditions and their caregivers within the context of primary care. In this study, we interviewed individuals with chronic conditions and their informal caregivers in pairs (dyadic interviews). This way, we were able to interview patients with low health literacy and who had trouble with telling ‘their story’. Furthermore, by including the informal caregiver, we gained more information about their environment from a different perspective.

The focus of our investigation was the daily lives of individuals with chronic conditions and their informal caregivers, examining the support they require from their primary care providers and the organisation of primary care itself. The dyadic interview strategy proved beneficial in facilitating the flow of information for individuals with chronic conditions who faced challenges in expressing themselves. When a person receives a diagnosis of a chronic disease, it is essential to recognize that they remain unique individuals with needs and preferences beyond their illness and symptoms[11-13]. Care providers should strive to move beyond merely fulfilling functional and essential activities of the patients, such as personal hygiene, and engage in meaningful activities and encounters. While these essential activities are crucial for individuals to navigate their day, finding meaning in various aspects becomes equally important[14-17]. In literature, we found that fulfilling functional and essential activities of the patients is related to quality of life[18]. Especially when care providers work with people with multiple chronic conditions they are mostly focused on the diseases and can forget about meaningful activities[18-20].

The search for meaning shapes how individuals with chronic conditions interact with and cope with their conditions, striking a delicate balance between what is strictly necessary and what brings satisfaction and meaning to their lives. Felton et al. indicates that this this search and coping with chronic conditions is dependent on the age of the patient[21]. Furthermore, Badr et al. mentions a difference between individual coping and dyadic coping with chronic disease[22]. A care process that focuses on diagnosis and treatment, while also treating individuals as unique persons, contributes to a more fulfilling life experience. By observing patients closely and asking unspoken questions to uncover their unexpressed needs, caregivers demonstrate their ability to "read" the patients. This intuitive understanding allows patients to feel seen, heard, and engaged in their care process. Poole et al. indicated that this understanding was neglected for a long time and was seen as a crucial element to perform quality care[23]. However, more recent studies show that the policy regarding understanding the patient changed over time[24]. Patients expect formal caregivers to go beyond their professional perspective and logical care solutions, acquiring the skills to intuitively comprehend the needs of individuals with chronic conditions. This finding is in line with more recent literature[25, 26].

According to patients, quality care involves active listening and attentiveness to their desires, and aspirations, and, above all, promoting their autonomy within a framework of support from a team of formal caregivers, family, and friends. Corresponding and in addition to our findings, Rayleigh et al. report that sources for supporting hopefulness were family, friends, and religious beliefs[27]. Our study shows that quality care starts with delivering care based on the specific needs and preferences of individuals living with chronic conditions. It empowers them to live their lives fully, regardless of their chronic conditions. Wong-Rieger et al. indicated that health coach can be beneficial to empower chronic patients during their lives and therapies[28]. In addition to that, Ghose et al. report that smart mobile health platforms can be used for the same purpose[29]. In our study, patients emphasised that ‘quality care’ can only be achieved through strong interprofessional collaboration, where the team works together, both among themselves and with the patients, to prioritize what matters most to the individuals under their care. While there are many existing studies and definitions on quality care, this definition was used and referred to in all chapters of this book[30-33].

Measuring the competences of the care provider regarding interprofessional collaboration, bio-psychosocial (BPS) working and self-management support.

In this study, we determined the demographics and assessed the competences of primary care professionals in terms of bio-psycho-social working, self-management support, and interprofessional collaboration. Furthermore, we expected and found significant differences between the various groups of care professionals. To do that, we first questioned the participants' demographics. Afterwards, we evaluated their competences with three validated instruments to assess the competences of primary care professionals for integrated care in Flanders. In total, 591 care providers participated in this study, with a predominance of female participants. Our study corresponds to previous research in which the ageing of caregivers in Western countries are present[34]. About half of the participants worked in a monodisciplinary group practice, while the rest worked in multidisciplinary or solo practices. There was an increasing trend of caregivers working in different types of practices to balance care provision and sustainable work routines. This is in line with existing literature. According to Zwiep et al., there are several advantages to work in a group practice such as improved satisfaction and quality of care, while increased stress due to poor interpersonal relations was indicated as disadvantage[35]. Our research showed that in Flanders, primary care is not functioning effectively based on the BPS model. Self-employed caregivers performed better than salaried ones, which goes against some studies that suggest a capitation system could enhance a holistic approach to care. Further research is needed to fully understand this finding. In a study conducted with care providers working in nursing homes, hospitals, and community care, the care providers scored higher than the participants of our research on all subscales except for assessment and reporting[36].

Regarding self-management support competences, caregivers with a medical background scored better than other groups, which is possibly related to their work setting, as caregivers with a medical background are more often self-employed. Those with more than 20 years of experience scored significantly better than those with less than five years of experience. This may indicate that having more experience, helps caregivers to better care in agreement with the literature[37-39]. Finally, caregivers in solo practices scored better than those in multidisciplinary settings, while self-employed professionals scored better than salaried employees. Comparing with other studies, participants in this study scored better overall[40].

For interprofessional collaboration, self-employed caregivers again scored better than salaried colleagues. This may be because self-employed caregivers have more say in their organizations and have developed collaborative skills. Compared to a study conducted in Canada, the Flemish care providers scored lower for partnership and cooperation but better for coordination. In general, the literature does not favour one payment model over the other, but new models like value-based care and capitation systems are gaining popularity[41-46].

Overall, the study highlights the need for enhancing competences in integrated care among primary care professionals and provides insights into the differences between various caregiver groups in Flanders. The key learnings from the study suggest that primary care professionals need to improve their competences in patient/client-centredness, cooperation, and communication for integrated care. Furthermore, it revealed that Flemish PC professionals score better for coordination in all three scales, compared to other reports.[36, 40, 47, 48] Our findings can be used to identify areas for improvement and support lifelong learning for both future students and current care professionals.

Exploring the experiences, needs and preferences of the care provider using a qualitative study.

We conducted a qualitative descriptive study with the aim of exploring the experiences of care professionals regarding patient-centred interprofessional collaboration and integration (PC-IPCI) in primary healthcare. The study was conducted in Flanders and utilised qualitative focus groups with semi-structured interview guides. A total of five focus groups were conducted in three waves, involving 36 primary care stakeholders. Notably, the composition of the focus groups ensured representation from a diverse range of disciplines, thus maintaining multidisciplinarity.

The findings of our study reveal a disparity between the experiences of the participants and their needs and preferences regarding PC-IPCI. Through the qualitative analysis, we identified five key themes that support PC-IPCI: (i) a shared vision in relation to readiness and attitude, (ii) improving the quality of care, (iii) open communication for PC-IPCI, (iv) the importance of education, and (v) the appropriate financial/payment system. Participants emphasized the importance of having a shared vision among healthcare professionals in relation to readiness and attitude towards PC-IPCI. This included fostering a collaborative mindset and a willingness to engage in interprofessional teamwork. Especially in management and education studies outside healthcare, we find strong evidence for the importance of a collaborative mindset[49-52]. Enhancing the quality of care emerged as a crucial theme. Participants recognized the significance of PC-IPCI in promoting patient-centred care and improving health outcomes through integrated and coordinated approaches. Effective and open communication was identified as a fundamental aspect of PC-IPCI. Participants emphasized the need for clear and transparent communication channels to facilitate collaboration, information sharing, and decision-making among healthcare professionals. This theme is strongly related with Sociocracy, which includes transparency and open communication as one of the seven main principles[53, 54].

Education emerged as a critical theme, with participants emphasizing the need for ongoing professional development and training to enhance interprofessional competencies and knowledge. They highlighted the importance of educational initiatives that promote teamwork, mutual understanding, and respect among healthcare professionals. Finally, participants identified the financial and payment system as a crucial factor influencing the success of PC-IPCI. They emphasized the need for a payment system that incentivizes and rewards collaborative care, ensuring that healthcare professionals are adequately compensated for their interprofessional efforts. In most industries, collaboration and meetings are considered as work and employers are paid for brainstorming sessions and teamwork[55, 56]. While there are already care providers performing collaboration and teamwork in Flemish healthcare, our results show that it is predominantly perceived as unpaid labour or not a part of their task package. However, performance of team meetings, interprofessional collaboration and integrated care should be incentivised to gain the best possible results for patients[57-60]. The identified themes provided valuable insights and recommendations for supporting and promoting effective PC-IPCI. These findings underscored the importance of fostering a shared vision, improving the quality of care, promoting open communication, prioritizing education, and implementing an appropriate financial/payment system to facilitate successful PC-IPCI implementation in primary healthcare settings.

Phase 2: Development phase

Development of a toolkit to improve interprofessional collaboration and integration in primary care using qualitative interviews and co-design workshops.

The development process and main components of the toolkit are aimed at improving interprofessional collaboration and integration in primary care. The toolkit, based on the principles of Sociocracy 3.0 and psychological safety, includes eight modules that address different facets of teamwork and collaboration.

This development process is composed of data originating from 65 care providers. We used a qualitative approach, conducting 13 in-depth interviews and five focus groups.

The data was analysed and then evaluated during eight co-design workshop sessions. These co-design workshops were organised with a total of 40 academics, lecturers, care providers and policymakers from the Flemish patients' platform. Findings from the qualitative interviews and co-design workshops were gradually, and inductively adapted and transformed into the content for the IPCI toolkit. By using a qualitative approach, we were able to explore healthcare providers' needs and preferences regarding tools. To achieve this, we examined existing methods, strategies, and concepts both within and outside of healthcare. This led to the use of concepts from the automotive and IT sectors, which are typically more advanced in terms of innovation and teamwork compared to healthcare[61-63].

Furthermore, we decided to organise co-design workshops to process the collected data and to adapt and integrate these concepts into a toolkit. This was done gradually, using eight workshop sessions over a period of two years, which allowed us to gain insights from different disciplines and profiles and to make sure the toolkit is applicable and useful for primary care. When there is a disconnect between theory and practice, it can cause major issues. Many products in different industries are created but prove to be ineffective because of this misalignment, leading to wasted resources for businesses and governments. To mitigate this issue, integrators, product owners, and project managers are assigned to bridge the gap between developers and clients, yielding valuable benefits[64-69]. In this study, we employed a suitable methodology to minimize this gap and ensure readiness for future implementation. Moreover, we tailored the toolkit and its modules to the experiences, necessities, and inclinations of every stakeholder in primary care, while keeping in mind the current literature on interprofessional cooperation and integration.

The toolkit includes a self-assessment tool designed to help care providers identify areas for improvement and find solutions. In our investigation, we stressed the value of recognizing the central role of cooperation between professionals and upholding a shared vision and common objectives. However, the toolkit lacks the explicit inclusion of a routine reassessment of this shared vision. Psychological safety is highlighted as a crucial factor in promoting teamwork and facilitating practice innovation[6-9]. However, the toolkit did not explicitly include the psychological safety of patients and their families during consultations or treatments.

The toolkit further incorporates consultation and decision-making techniques inspired by the Sociocracy framework[53, 54, 70, 71]. Care providers concurred that patient-centred approaches, which view patients as partners, enhance their participation and involvement in decision-making. Finally, to address specific problems, care providers can form workgroups to focus on population-based work for prevention and integrated collaboration within primary care. Despite work groups being prominent in the toolkit based on our data, the literature lacks solid proof of their effectiveness .

The study acknowledges several strengths, including a bottom-up multi-staged approach involving a diverse range of participants, in-depth interviews, focus groups, and co-design workshops. Triangulation and collaboration among researchers from different backgrounds were employed to enhance credibility and reduce bias. Nonetheless, our methodology and design decisions have certain limitations. The toolkit may not cover all issues in the broader context of Flemish primary healthcare, and the findings may not be generalisable to other regions and settings. The presence of researchers could have influenced the interpretation and analysis of data, despite efforts to minimise bias. Finally, our study emphasises that interprofessional collaboration is essential for integrated care and highlights the need for ongoing adaptation, improvement, and evaluation of the toolkit based on the changing landscape of primary care and further research.

How to deal with multiple existing definitions of interprofessional collaboration and integrated care?

There are several definitions for interprofessional collaboration and integrated care in current literature. Some of these definitions are included in the thesis and spread throughout the chapters. Although using these definitions and clearly distinguishing between different variants of some terms has had a great impact on scientific articles, these terms and their definitions do not always enjoy equal attention among healthcare professionals. Healthcare professionals often gravitate towards easy-to-understand and overarching terms. The difference between interdisciplinary and interprofessional collaboration, or the classification with meso, micro, and macro levels of integrated care does not hold much importance for most healthcare professionals. Instead, healthcare providers are more concerned about care continuity, access and sharing of data, problems regarding hierarchy and coordination between multiple settings. What terminology is used or exact definitions are less relevant. Among patients (Chapter 3), we see that they do not care how or when caregivers collaborate. However, they do want the attending caregiver to get the necessary information about themselves and be able to coordinate with other caregivers in a timely manner.

Our research shows that healthcare professionals need practical tools and concepts that can be used efficiently.

While we as researchers must remain very committed to keeping definitions up-to-date and improving them, we must also understand healthcare professionals who prefer to be practical and prefer easy-to-understand concepts. This makes researchers who want to make an impact need to be able to translate their scientific papers into usable and understandable information.

Impact of the COVID-19 crisis

It’s important to note that the COVID-19 pandemic significantly affected this study, necessitating quick and flexible reactions to unforeseen difficulties. By switching to video interviews, acknowledging the decreased interest from practices, understanding the shifting priorities of care professionals, and navigating delays in data collection and analysis, we successfully addressed the obstacles posed by the pandemic.

Recommendations for the practice and future research

This thesis contributes novel insights to the scientific community through its exploration of patient-centred care, interprofessional collaboration, integrated care, and the development of a practical toolkit aimed at enhancing collaboration and integration within primary healthcare settings. The interdisciplinary approach and focus on practical implementation render this work valuable for policymakers, academics, and care providers seeking to elevate care quality and collaboration in primary care.

Specifically, the research underscores the significance of recognising patients as unique entities with preferences extending beyond medical conditions. This underscores the importance of tailoring care holistically, promoting patient-centredness. Additionally, it emphasises the necessity of robust collaboration between healthcare and welfare professionals, highlighting the pivotal role of effective teamwork and patient involvement in delivering quality care to those with chronic conditions.

The study introduces a novel approach by proposing the creation of a versatile intervention formed from amalgamating existing strategies. This concept responds to the lack of comprehensive strategies to enhance collaboration within primary care, considering the adaptability of these strategies across diverse scenarios. Remarkably, the thesis advocates for cross-disciplinary integration, suggesting the inclusion of concepts from domains external to healthcare, such as psychological safety and Sociocracy. This strategy seeks to reinforce collaboration within primary care through the infusion of fresh perspectives.

Additionally, the research identifies the need for continuous enhancement of caregiver competences, acknowledging skill disparities and advocating for ongoing professional development. It also considers contextual challenges in intervention implementation, recognizing variations in health systems, financing, governance, and culture, thereby emphasizing the necessity of tailored approaches.

Central to the thesis is the creation of a structured toolkit, inspired by concepts like Sociocracy 3.0 and focusing on psychological safety. This toolkit offers a pragmatic methodology to cultivate supportive and inclusive healthcare environments. Co-design workshops and qualitative interviews engage primary care stakeholders in its development, ensuring alignment with their needs. Moreover, interdisciplinary collaboration in toolkit development is underscored, ensuring its theoretical foundation and practical utility. Lastly, the research prioritizes continuous adaptation and evaluation of the toolkit, responding to the evolving landscape of primary care and cementing its role as a dynamic resource.

In this section, we provide recommendations for practice and future research. These recommendations are not sorted hierarchically and are equally important.

Recommendations for the practice:

I. Foster a culture of collaboration: Our research shows that creating a supportive organisational culture, that values and promotes interprofessional collaboration. Furthermore, it is highly recommended for teams and practices to encourage open communication, mutual respect, and shared decision-making among healthcare professionals.
II. Implement the IPCI toolkit: Consider adopting and implementing the IPCI toolkit in primary care settings to improve interprofessional collaboration and integration. The toolkit consists of eight modules covering various aspects of collaboration and team integration, providing valuable resources for healthcare providers.
III. Know the toolkit is not perfect: When implementing the IPCI toolkit, it is important to recognize that it is a customizable toolkit that requires ongoing improvement and updates. Therefore, it is crucial not to assume that this toolkit will single-handedly solve all collaboration and teamwork challenges. Healthcare providers should take an active role in addressing these issues. The toolkit serves as a valuable support tool and should be utilized and understood in that capacity.
IV. Conduct periodic revisions of the shared vision and common objectives of your team: Recognise the importance of maintaining a shared vision among care

providers. Regularly review and update the shared vision and objectives to ensure alignment and promote interprofessional collaboration.

V. Explore the effectiveness of workgroups: The toolkit includes a tool to form work groups to solve (local) problems. By tackling problems in collaboration with your colleagues, you might lose less time and provide better care.

VI. Ensure ongoing adaptation and evaluation: As a care provider, recognise that healthcare practices and the primary care landscape are continually evolving. Regularly adapt, update, and evaluate the IPCI toolkit to align with the changing needs and challenges of interprofessional collaboration in primary care.

VII. Consider contextual factors: Acknowledge that the toolkit's findings and recommendations may be specific to the Flemish primary healthcare context. When implementing the toolkit or adopting strategies from other regions, consider the unique characteristics of the local healthcare system, culture, and policies.

Recommendations for future research:

I. Evaluation of the Toolkit: A study to evaluate the effectiveness and impact of the developed toolkit for improving interprofessional collaboration and integration in all levels of care, could be realised. This study can involve implementing the toolkit in different settings including hospitals, nursing homes and mental healthcare settings and assessing its outcomes on collaboration, teamwork, patient satisfaction, and healthcare outcomes.

II. In this thesis, a toolkit was developed based on multiple research. However, a long-term implementation and evaluation is lacking. As an addition to this thesis, we recommend performing longitudinal studies to examine the long-term effects of interprofessional collaboration and integration on patient outcomes, healthcare quality, and cost-effectiveness. This can involve tracking patient outcomes and healthcare utilisation over an extended period and comparing the results between settings with varying levels of collaboration and integration. This can be achieved using PREMs and PROMs.

III. International comparative analysis: This thesis collected and analysed data from Flanders, Belgium and was not able to perform an international comparative analysis. We recommend conducting a comparative analysis of primary care systems in different countries to understand the factors that contribute to successful interprofessional collaboration and integration. This analysis can involve examining policy frameworks, payment models, and organisational structures that support collaboration and integration, as well as identifying best practices that can be adapted to different healthcare contexts.

IV. Additional research on patient perspectives: Further investigate patient perspectives on interprofessional collaboration and integration in primary care. To gather patient feedback on collaborative care, it may involve conducting surveys or qualitative studies. These methods aim to capture insights into patients' experiences, preferences, perceived benefits, as well as risks and disadvantages associated with collaborative care. Additionally, exploring the impact of interventions on patient-reported outcomes and experiences and quality of life can provide valuable insights.

V. Training and education: Examine the effectiveness of training and educational programs aimed at enhancing the competences of healthcare professionals in interprofessional collaboration and integration. This research can assess the impact of different educational approaches, such as simulation-based training, interprofessional education initiatives, and continuous professional development programs, on healthcare professionals' attitudes, knowledge, and skills in collaborative care. To avoid duplication, try to collaborate with existing initiatives or projects (e.g. IPSIG).

VI. Health system redesign: Investigate the role of health system redesign in supporting interprofessional collaboration and integration. This research can focus on exploring innovative models of care delivery, payment reform, and policy changes that promote collaboration and integration across different levels of the healthcare system.

VII. Our literature review has reviled a lack of cost-effectiveness analysis of interventions in primary care. We suggest to conduct cost-effectiveness analyses to assess the economic impact of interprofessional collaboration and integration in primary care. This research can compare the costs and benefits of collaborative care models with traditional models of care, considering healthcare utilization, patient outcomes, and healthcare expenditure.

VIII. Technology and digital solutions: Especially during the COVID19 pandemic, problems regarding digital literacy and lack of data interoperability were exposed. To support governments in improving healthcare, researcher can explore the role of technology and digital solutions in supporting interprofessional collaboration and integration in primary care. This can involve investigating the use of telehealth, electronic health records, communication platforms, and other digital tools to facilitate information sharing, care coordination, and collaboration among healthcare professionals.

CONCLUSION

Overall, our research revealed a lack of interventions and methods to improve interprofessional collaboration and integration in primary care. Both patients and healthcare providers expressed similar needs and preferences, indicating a shared desire for an effective healthcare system. However, implementation challenges arise due to limited tools, insufficient resources, and structural limitations in the current healthcare system. Our survey results revealed healthcare providers' low scores in certain competencies, emphasizing the need for additional training and adjustments in the health and payment systems to facilitate collaboration and integrated care. Moreover, there is a growing consensus among healthcare providers, governments, academics, and patients regarding the importance of interprofessional collaboration and integration in primary care. This thesis fills research gaps by providing new data and insights specific to Flemish primary care, contributing to both the local and international practice and research communities. By addressing these challenges, promoting training, and making system-level adjustments, we can pave the way for successful implementation of interprofessional collaboration and integrated care, ultimately improving the quality of healthcare services provided to patients.

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Summary

By exploring the experiences, needs, and preferences of patients with chronic conditions, it became also clear that it is important to acknowledge individuals as unique persons with needs and preferences beyond their illnesses. Furthermore, to provide quality care for patients with chronic conditions, it is necessary to have strong collaboration between different healthcare and welfare professionals. This collaboration should involve teamwork among healthcare professionals and active engagement with patients to prioritize what mattered most to them. The findings of the exploration phase also highlighted the importance of a shared vision, open communication channels, and educational initiatives to enhance interprofessional competencies and knowledge. Due to the lack of strategies and interventions aimed at improving collaboration in primary care, as revealed during the exploration phase, our research indicates that a combination of existing strategies and interventions, as 'building blocks,' is necessary to create a generic intervention that can be applied across various settings and levels of primary care. Incorporating strategies, concepts, and interventions from domains outside of healthcare could prove to be beneficial in primary care. Additionally, an appropriate financial/payment system that incentivised and rewarded collaborative care was essential for the success of interprofessional collaboration in primary healthcare settings.

To fulfil all these needs and preferences, care providers needed to enhance their competences in providing integrated care. Our research showed that there were variations in skill levels among different groups of caregivers, highlighting the need for continuous professional development and student training about patient/client-centeredness, cooperation, and communication for integrated care. Finally, our exploration showed that the implementation of strategies and interventions in primary care settings can be challenging due to variations in health systems, financing, governance, title protection, and culture. Therefore, careful consideration should be given to contextual factors when adapting and implementing interventions from other countries or healthcare levels. Overall, the exploration phase revealed the importance of comprehensive strategies, patient-centred care, interprofessional collaboration, competence development, and addressing implementation challenges to promote effective interprofessional collaboration and integration in primary care. These findings could guide policymakers, academics, and care providers in improving the quality of care and enhancing collaboration within primary healthcare settings.

By providing a structured approach and modules covering various aspects of collaboration and team integration, we think that a toolkit could contribute to better teamwork and coordination among care providers. The toolkit incorporated concepts from Sociocracy 3.0 and emphasised the importance of psychological safety. These elements fostered a supportive and inclusive environment where healthcare providers felt comfortable sharing ideas, expressing concerns, and working together effectively. The use of qualitative interviews and co-design workshops allowed the researchers to explore the needs and preferences of healthcare providers regarding collaboration tools. This approach ensured that the toolkit was developed based on the experiences and insights of the primary care stakeholders, making it more relevant and useful for them. By adopting relevant concepts from these industries, the toolkit could benefit from advancements and best practices that may not have been previously applied in the healthcare sector.

The co-design workshops played a crucial role in processing the collected data and incorporating the concepts into the toolkit. The iterative nature of the workshops, conducted over a two-year period, allowed for insights from different disciplines and profiles to be considered, ensuring that the toolkit was applicable and useful in the context of primary care. This methodology enabled to bridge the gap between theory and practice, which was often a challenge in the development of products and tools. By involving integrators, product owners, and project managers, the research team aimed to ensure that the toolkit was not only theoretically sound but designed to be practical and aligned with the needs of primary care providers. The toolkit was developed by taking into account the experiences, needs, and preferences of various stakeholders in primary care, as well as existing literature on interprofessional collaboration and integration, to ensure alignment with established knowledge and best practices in the field. It consisted of various modules, including a self-assessment tool, consultation and decision-making techniques inspired by Sociocracy, and the formation of workgroups for population-based work. Triangulation and collaboration among researchers from different backgrounds were employed to enhance credibility and reduce bias. Finally, the study emphasized the need for continuous adaptation, improvement, and evaluation of the toolkit to account for the changing landscape of primary care.

Samenvatting

Deze thesis beschrijft de ontwikkeling van tools en handvaten die interprofessionele samenwerking en integratie in de eerstelijnszorg versterken. Ons onderzoek startte in oktober 2019 met een exploratieve fase waarin we enerzijds doken in de literatuur. Daaruit weerhielden we waardevolle concepten, werkwijzen en strategieën die later werden gebruikt om de toolkit te ontwikkelen. Daarnaast onthulde de literatuurstudie een schaarste aan strategieën en methoden die gericht zijn op het verbeteren van samenwerking in zijn geheel. Bestaande interventies (zie hoofdstuk 2 voor deze interventies) richten zich vaak op specifieke aspecten van interprofessionele samenwerking, interveniërend op een van de thema's zoals coördinatie of communicatie. Hierdoor werd duidelijk dat integreren van strategieën, concepten en interventies vanuit domeinen buiten de gezondheidszorg nuttig kan zijn. Over het algemeen gaf de literatuurstudie weer dat er nood is aan een combinatie van bestaande strategieën en interventies, als 'bouwstenen', om een generieke interventie te ontwikkelen die kan worden toegepast in verschillende praktijken en op verschillende niveaus in de eerstelijnszorg.

Anderzijds bevroegen we in de exploratieve fase de ervaringen, noden en voorkeuren van zorgverleners, patiënten en mantelzorgers, specifiek over het werk in de Vlaamse eerstelijnszorg, met (groeps)interviews en enquêtes. Het resultaat is een combinatie van internationale wetenschappelijke evidentie met pragmatische ervaringskennis, -wensen en –behoeften uit de dagdagelijkse Vlaamse praktijk. Door dit onderzoek is duidelijk geworden dat het belangrijk is om chronisch zieke individuen te erkennen als unieke personen met behoeften en voorkeuren die veel verder gaan dan hun ziekte. Om patiënten met chronische aandoeningen kwaliteitsvolle zorg te kunnen bieden, is een sterke samenwerking tussen verschillende zorg- en welzijnsprofessionals essentieel. Deze samenwerking wordt gekenmerkt door actieve betrokkenheid van patiënten en door prioriteit te geven aan wat voor hen het belangrijkst is. De bevindingen van de exploratiefase benadrukken het belang van een gedeelde visie, open communicatie en educatieve initiatieven om competenties en kennis op het gebied van interprofessionele samenwerking te verbeteren. Om te voldoen aan de behoeften en voorkeuren van patiënten, moeten zorgverleners hun competenties in het leveren van geïntegreerde zorg verbeteren. Ons onderzoek toonde significante verschillen in de competentieniveaus tussen diverse groepen zorgverleners, wat de noodzaak benadrukte van voortdurende professionele ontwikkeling en training op het gebied van patiënt/cliëntgerichtheid, samenwerking en communicatie voor geïntegreerde zorg. Daarnaast is een geschikt financieel model

dat samenwerking in de zorg stimuleert en beloont essentieel voor het succes van interprofessionele samenwerking in de eerstelijnszorg.

Tot slot blijkt uit de exploratiefase dat de implementatie van strategieën en interventies in de eerstelijnszorg een uitdaging kan zijn vanwege variaties in gezondheidssystemen, financiering, management en cultuur. Daarom moet er zorgvuldig rekening worden gehouden met contextuele factoren bij het aanpassen en implementeren van interventies uit andere landen of gezondheidszorgniveaus. Er is nood aan generieke strategieën, patiëntgerichte zorg, interprofessionele samenwerking, competentieontwikkeling en het aanpakken van uitdagingen bij de implementatie om effectieve interprofessionele samenwerking en integratie in de eerstelijnszorg te bevorderen. Deze bevindingen kunnen als leidraad dienen voor beleidsmakers, academici en zorgverleners bij het verbeteren van de kwaliteit van zorg en het bevorderen van samenwerking binnen de eerste lijn.

Op basis van gegevens uit de exploratieve fase en additionele studies uitgevoerd in de Vlaamse eerstelijnszorg, werd een toolkit ontwikkeld om interprofessionele samenwerking en integratie in de eerste lijn te versterken. In deze toolkit krijgen zorgverleners hulpmiddelen (tools) aangereikt met het oog op het verhogen van de efficiëntie van het teamwerk. Dit houdt in dat de toolkit zorgverleners helpt bij het communiceren en coördineren van zorg met en tussen verschillende actoren (o.a. patiënten, (in)formele zorgverleners, mantelzorgers, families, …)

De toolkit bestaat uit acht modules en is een synthese van uit wetenschappelijke literatuur gefundeerde concepten, die op basis van ervaringen van patiënten en zorgverleners zijn gefinetuned. Concreet krijgen zorgverleners een handleiding aangeboden waaruit men, op basis van de eigen noden en behoeften, diverse strategieën kan kiezen ter ondersteuning en ter versterking van de samenwerking. Daarnaast is deze algemene of generieke toolkit bruikbaar voor alle type zorgverleners, teams en zorginstellingen in de eerstelijnszorg. Zowel zorgverleners die onder één dak werken, als zorgverleners op verschillende locaties en niveaus kunnen deze toolkit gebruiken om hun samenwerking te versterken. De acht modules zijn: (i) zelfevaluatietool, (ii) voorbereiding op het gebruik van de toolkit, (iii) psychologische veiligheid bevorderen, (iv) overlegtechnieken, (v) Gezamenlijke besluitvorming, (vi) samenstellen van een team (werkgroep) rond een specifieke problematiek, (vii) persoonsgericht werken en (viii) integratie van een nieuw teamlid.

Dit zijn acht verschillende, op elkaar afgestemde modules, die samen een toolkit vormen en die de verschillende aspecten van samenwerking en teamintegratie behandelen. De ontwikkelde toolkit bevat concepten uit Sociocratie 3.0 en benadrukt het belang van psychologische veiligheid. Deze elementen bevorderen een ondersteunende en inclusieve omgeving waarin zorgverleners zich op hun gemak kunnen voelen om ideeën te delen, zorgen te uiten en efficiënt samen te werken. Door gebruik te maken van kwalitatieve interviews en co-design workshops konden de onderzoekers de behoeften en voorkeuren van zorgverleners met betrekking tot samenwerkingstools onderzoeken. Deze aanpak zorgde ervoor dat de toolkit werd ontwikkeld op basis van de ervaringen en inzichten van alle actoren in de eerstelijnszorg. Door relevante concepten uit andere sectoren over te nemen, kon de toolkit gebruikmaken van bestaande interventies en goede praktijken die mogelijk nog niet eerder in de gezondheidszorg waren toegepast.

De co-design workshops speelden een cruciale rol bij het verwerken van de verzamelde gegevens en het opnemen van nieuwe concepten in de toolkit. De iteratieve aard van de workshops, die over een periode van twee jaar werden uitgevoerd, maakte het mogelijk om inzichten uit verschillende disciplines en profielen op te nemen, zodat de toolkit toepasbaar en nuttig was in de eerstelijnscontext. Deze methodologie hielp de onderzoekers om de kloof tussen theorie en praktijk te overbruggen, wat vaak een uitdaging kan zijn bij de ontwikkeling van producten en tools. Door integratoren, producteigenaren en projectmanagers te betrekken bij het ontwikkelingsproces, kan men ervoor zorgen dat producten of tools niet alleen theoretisch werken, maar ook praktisch ontworpen en afgestemd worden op de behoeften van de eindgebruikers. Bij de ontwikkeling van de toolkit hebben de ontwikkelaars eveneens deze rollen op zich genomen. Er werd dus rekening gehouden met de ervaringen, behoeften en voorkeuren van alle actoren in de eerstelijnszorg, evenals met bestaande literatuur over interprofessionele samenwerking en integratie. Deze triangulatie en samenwerking tussen onderzoekers met verschillende achtergronden werd ingezet om een wetenschappelijk gefundeerde, maar ook bruikbare toolkit te ontwikkelen. Tot slot benadrukt het onderzoek de noodzaak van voortdurende aanpassing, verbetering en evaluatie van de toolkit om rekening te houden met het veranderende landschap van de eerstelijnszorg.

Dankwoord

Ik wil eerst en vooral iedereen bedanken die een bijdrage of rol heeft gespeeld in deze thesis. Vele namen zullen niet op deze schamele pagina staan, maar ik kan de lezer van deze thesis verzekeren dat er heel wat helden zonder naam hierin waren betrokken. Van patiënten die hun kostbare tijd investeerden in interviews, onderzoekers, zorgverleners en beleidsmakers die zonder enige winstoogmerk intellectuele bijdrage leverden aan de toolkit, tot familie en vrienden die me gedurende vier jaar altijd hebben ondersteund zowel bij goede als slechte tijden.

Mijn promotors: Peter, Hans, Kris en Kristel. Altijd voelde ik me ondersteund en kon ik bij jullie terecht wanneer ik ook wou. Zelfs tijdens vakantiedagen of trips belde ik jullie 'per ongeluk' voor een dringende vraag en kon ik jullie expertise altijd en overal raadplegen.
Bedankt voor alles! Zonder jullie was deze thesis ZEKER niet gelukt!

Een speciale dank aan de Academie voor de Eerste Lijn. Roy, Emily, Nick, Sibyl, Anabel, Mieke, Isabel Hanne en Cil. Vanaf dag 1 wist ik dat ik de juiste keuze maakte met deze doctoraat. En dat heb ik zeker ook aan jullie te danken. Van begin tot einde hebben jullie mij en dit project ondersteund. Altijd ruimdenkend, visionair en innovatief. Geen enkel idee was te ambitieus. Bedankt voor alles van de voorbije vier jaar!

Dagje, Lotte en Ine. We zijn vanaf het begin samen gaan werken en hebben al snel (met vallen en opstaan) ons eerste artikel geschreven. Daarna volgden al snel nieuwe mijlpalen die we met glans hebben behaald. Ik heb jullie gekend en zal jullie blijven herinneren als ijverige, intellectuele kompanen. Veel succes met jullie verdere carrière!

Heel WP5 team! Vanessa, Peter, Paul, Kristel, Hilde, Joke, Maja, Giannoula, Erika en Nele. Wat was het een goed idee om co-design workshops te organiseren. De toolkit werd door jullie intellectuele bijdragen beter dan wat het ooit had kunnen zijn. Ben zeer blij dat ik zulke sterke en intelligente begeleiders en partners heb gehad gedurende voorbije vier jaar.

Team WP1: Speciale dank aan Dominique en Patricia die heel hard hebben gewerkt om alle onderzoek in WP1 (die op zich al een doctoraat kon zijn) succesvol af te ronden. Vanaf dag 1 heb ik van jullie kunnen leren en geen enkel vraag was te veel. Oprecht dank ik jullie voor alle ondersteuning!

Koning Boudewijnstichting en Fonds Dr. Daniel De Coninck. Zonder jullie investeringen in praktijkgericht onderzoek, was dit allemaal niet eens mogelijk geweest. De voorbije vier jaar kon ik via jullie sponsorship mij fulltime verdiepen in de eerstelijnszorg. Studies uitvoeren, publiceren, mijn werk presenteren in het buitenland, … Alles werd mogelijk gemaakt via de fondsen die beschikbaar werden gesteld. Bedankt om dit allemaal mogelijk te maken en ik hoop dat er in de toekomst meer aandacht en fondsen beschikbaar worden gesteld voor de eerstelijnszorg.

Pre-doc club. I want to thank Annelies, Stefan, Katrien, Eva, Hamid, Ryan, Emilie, Luna, Phuong, Julie, Naomi, Jil, Melanie, Monika, and Flore. I was not always at the meetings, but knew that we were one big team. Since I finished my PhD, I am not a team member anymore. However, if you have any questions, you can call or mail me whenever you want!

Als laatst wil ik iedereen van UAntwerpen, Mediadienst, Bibliotheek, GKC, Huisartsgeneeskunde en Verpleegkunde en Vroedkunde bedanken!

Supplemental material

All supplemental material is available online.

Chapter 2

http://dx.doi.org/10.1136/bmjopen-2022-062111

Chapter 3

https://doi.org/10.1111/jocn.16243

Chapter 4

Will be added soon

Chapter 5

Will be added soon.

Chapter 6

https://doi.org/10.3389/fpubh.2023.1140987