

Factors influencing the implementation of the CombiConsultation in Dutch clinical practice: a mixed-methods study

Valérie A.M. Meijvis^{1,3,*}, Mette Heringa¹, Henk-Frans Kwint¹, Niek J. de Wit², Marcel L. Bouvy³

¹SIR Institute for Pharmacy Practice and Policy, 2331 JE Leiden, The Netherlands

²Department of General Practice, Julius Centre for Health Sciences and Primary Care, University Medical Centre Utrecht, 3584 CG Utrecht, The Netherlands

³Department of Pharmaceutical Sciences, Utrecht University, 3584 CG Utrecht, The Netherlands

*Correspondence: SIR Institute for Pharmacy Practice and Policy, 2331 JE Leiden, The Netherlands. E-mail: v.meijvis@sirstevenshof.nl

Abstract

Objective: The CombiConsultation is an innovative concise clinical pharmacy service by the community pharmacist for patients with a chronic condition. We aimed to identify relevant factors influencing the implementation of the CombiConsultation in Dutch clinical practice.

Methods: A mixed-methods study involving interviews and a questionnaire. Content analysis topics within TDF domains were derived from the interview data and were related to the COM-B-model (capability–opportunity–motivation–Behaviour). The relevance of the resulting topics was explored using a questionnaire with 19 statements administered to all 27 pharmacists who performed CombiConsultations.

Key findings: Eighteen topics emerged from the interviews. The questionnaire was completed by 23 of the 27 pharmacists. In the domain ‘capability’, a small number of participants indicated that they need more expertise in pharmacotherapy (13%) and training in consultation skills (35%). In the domain ‘opportunity’, all participants indicated that an existing good collaboration with the general practitioner/practice nurse and access to all relevant medical data were necessary to implement the CombiConsultation. In terms of motivation, job satisfaction was most important to all participants, followed by adequate reimbursement (83%) and improving collaboration with other healthcare providers and the relationship with patients (78%).

Conclusions: Capability, opportunity, and motivation were all considered relevant for the implementation of the CombiConsultation. There were crucial factors on the level of the individual pharmacist, on the level of the local collaboration and organization, and on the health system level.

Keywords: CombiConsultation; community pharmacist; general practice; pharmaceutical care; primary care

Introduction

Over the last few decades, the role of the community pharmacist (CP) has expanded from traditional tasks of dispensing medications and providing basic medication counselling to the more patient-centred provision of clinical pharmacy services. These services are designed to improve a patient’s quality of life by promoting safe, effective, and optimal medication use. The global literature has highlighted its beneficial impact on improving patient adherence and overall health outcomes [1, 2].

One of the most studied and effective interventions performed by pharmacists is clinical medication reviews (CMRs) [3, 4]; however, due to time constraints and capacity problems, many patients are not considered suitable for a CMR. Less time-consuming medication reviews may be an alternative. Therefore, a new clinical pharmacy service has been developed: the CombiConsultation.

The CombiConsultation is a consultation with the CP for patients with a chronic condition that requires chronic drug treatment. This consultation is aligned with the periodic check-up for this chronic condition by the practice nurse (PN) or general practitioner (GP). During the consultation, the CP

focuses on the patient’s health-related goals and advises medication changes, which are evaluated after a few weeks [5]. The prospective intervention study ‘CombiConsultation’ was conducted in the Netherlands and has been evaluated in a non-randomized implementation study [6].

The CombiConsultation’s key strength lies in its efficacy, where approximately 72% of the suggested interventions have been successfully implemented. Furthermore, the CombiConsultation takes less time compared to a CMR and fosters enhanced collaboration with other healthcare providers [6, 7].

Pharmacists are generally positive about expanding clinical services. The advantages of this role include helping patients, increasing their competence, and garnering recognition from both patients and healthcare providers. However, pharmacists may struggle to use clinical services in practice [8, 9]. They perceive barriers to implementation [10], including organizational factors (such as competing tasks, inadequate time, and insufficient staff), pharmacist-related factors (such as a lack of confidence and the fear of new responsibility), and external factors (such as the required

collaboration with the GP and reimbursement) [11–13]. Pharmacists often deliver clinical pharmacy services complementary to dispensing services, which are often provided under time pressure and vary in level of quality [14, 15]. For maximal impact on pharmaceutical care and to improve population-level health, large-scale implementation of clinical pharmacy services is needed [16]. Factors influencing widespread implementation of an innovation within the community pharmacy setting are internal (pharmacy staff) and external (patients and healthcare professionals) commitment to the innovation and operationalization of it in clinical practice (such as adequate resources) [17]. Using pilot strategies, promoting whole-team involvement and engaging stakeholders could be helpful for widespread implementation [15, 17]. The aim of this study was to identify relevant factors influencing the implementation of the CombiConsultation in Dutch clinical practice.

Methods

Design

This research is a mixed-methods study, used in an exploratory sequential design [18, 19]. First, a qualitative approach (interviews) was used to identify topics relevant for the implementation of the CombiConsultation (step 1), and second, a quantitative approach (questionnaire) was used to quantify the relevance of the identified topics (step 2).

Setting

We performed a mixed-method study within a prospective intervention study ‘The CombiConsultation’, which was performed in 21 Dutch pharmacies (with 27 CPs) and associated GP practices.

The CombiConsultation study

The CombiConsultation is conducted by the CP and either the PN or GP. The CombiConsultation takes place in the general practice. The patient visits the PN or GP before or after the consultation with the CP. The focus of the CP during the consultation (15–20 min) is to identify 1 or 2 main health-related complaints in relation to the chronic condition. Based on the identified drug-related problems (DRPs) and personal health-related goals, the CP proposes recommendations to improve pharmacotherapy to the PN/GP. During this study,

834 patients with diabetes mellitus, chronic pulmonary obstructive disease, and/or (risk of) cardiovascular disease were included. The median number of CombiConsultations performed per pharmacy was 29 (range: 2–106; interquartile range [IQR]: 48) [6].

Step 1: Interviews

Development of the interview guide

A semi-structured interview guide was drafted by VM and MH (pharmacists). VM and MH had training in qualitative research, including content analysis. The interview guide consisted of 19 questions. Topics for the interviews were derived from the theoretical domains framework (TDF), which describes important factors underlying implementation issues [20]. The interview guide was discussed within the research group till a final version was compiled. The initial interview guide was pilot tested with the first interview and refined as needed (Supplementary additional file 1).

Recruitment and data collection

Purposive sampling was used to recruit at least 10 CPs from the implementation study, based on the following characteristics: their location, clinical setting, and the number of CombiConsultations performed (Table 1). Data saturation was defined as the point at which no new main codes emerged and was checked after the tenth interview [21]. Due to participation in the intervention study, the CPs knew the researchers and the purpose of their study. Interviews were conducted by telephone or face to face. Participants received €50 for participation. Prior to questioning, participants provided informed consent.

Interview analysis

All interviews were audio-recorded and transcribed verbatim (WN). Transcripts were read repeatedly to ensure familiarization with the data. NVivo qualitative data analysis software (version 12 pro, QSR International) was used for content analysis [22]. Initial open coding was performed independently by VM and WN. Initially, four interviews were double coded (VM and WN). Differences and uncertainties in the coding of all interviews were resolved by consensus through discussions involving a third researcher (MH) with expertise in using the TDF. The initial codes were grouped into a main code. This resulted in a final coding scheme. Main codes were linked to

Table 1. Interviewed pharmacists' characteristics.

	Gender	Years of experience	Area of pharmacy	Clinical setting of CombiConsultation	Mode of interview	No. of performed CombiConsultations
1	Female	14 years	Rural	Pharmacy	Face to face	10
2	Female	10 years	Urban	GP practice	Face to face	76
3	Female	16 years	Urban	GP practice	Face to face	81
4	Female	7 years	Urban	Pharmacy and GP practice	Telephone	44
5	Female	20 years	Urban	Pharmacy and GP practice	Face to face	11
6	Male	25 years	Rural	Pharmacy	Telephone	37
7	Male	21 years	Urban	GP practice	Telephone	98
8	Female	9 years	Rural	Pharmacy	Telephone	2
9	Male	2 years	Urban	Pharmacy	Face to face	32
10	Female	13 years	Urban	GP practice	Face to face	67

Table 2. Topics that emerged from the interviews related to COM-B and the theoretical domains framework.

COM-B component	TDF domain	Topics	Selected quotes from interviewees
Capability	Knowledge	Pharmacotherapeutic expertise	'[...] You can expect from a professional (pharmacist) that they are particularly well trained in the field of DM [diabetes mellitus] and CVRM [cardiovascular risk management] and that type of common disorders' (<i>Pharmacist 7</i>).
	Skills	Trained in consultation	'I think consultation is in itself a separate profession. I say that I am doing it automatically, but I still can develop my consultation skills. So it doesn't seem like something you can easily learn' (<i>Pharmacist 3</i>).
	Behavioural regulation	Scheduling consultations	'Because there was not one person who felt responsible for that [concerning scheduling patients]' (<i>Pharmacist 9</i>).
	Memory, attention, and decision processes	Ability to prioritize within daily activities	'You have to ensure you have trained personnel, you have proper in-house emergency service, that you pass your audits every year, you make sure your supplies are right, [and] you don't have an increased waiting time. As a pharmacist, you're managing all those things all day. Therefore, pharmacists see the CombiConsultation as a burden rather than an added value' (<i>Pharmacist 7</i>).
Opportunity	Social influences	An existing collaboration with other care providers	'Because there's very good contact, the project is running better, as they accept things from me, they know my expertise' (<i>Pharmacist 8</i>).
	Environmental context and resources	Access to medical data	'The ideal situation would be if you can mainly work in the GP system, because you can make notes and view the patient's medical file. That's not the case now, but I think it would be a huge improvement' (<i>Pharmacist 6</i>).
		Workplace of the pharmacist	'I think the pharmacy is fine. And the general practitioner is located in the same health care centre, so I don't think it makes much difference to the patient if they come to our consulting room or the doctors' office. It's practically the same area. So I'd like to keep this in my own pharmacy' (<i>Pharmacist 8</i>).
		Consecutive consultations	'We put our questions in the GP system. The practice nurse saw these questions, and after her consultation, we immediately received the answers. So it works really fast' (<i>Pharmacist 10</i>).
	Sufficient staff	'Last time, we were understaffed, so it became of secondary importance' (<i>Pharmacist 4</i>).	
Motivation	Social/professional role and identity	Visibility of the pharmacist	'[...] We absolutely must show this is our expertise and we are good at it [providing care]. We should conquer a position' (<i>Pharmacist 2</i>).
	Beliefs about capabilities	–	–
	Optimism	The future of pharmacy practice	'I did it mostly in my own time, but is it a negative? I don't know. No, it makes me very happy because it gives our profession an opportunity, hope, a boost' (<i>Pharmacist 5</i>).
	Beliefs about consequences	Other target group compared to medication review	'It's a different target group than you would have with a regular medication review. It's a relatively young target group, patients you otherwise wouldn't speak to. And it [the consultation] yields quite a lot' (<i>Pharmacist 10</i>).
		Improved collaboration between health-care providers	'I visit them [practice nurses] much easier, but also the other way around. Even the GPs are much easier to approach. Before it was always like 'there's the pharmacist.' But now they call me by my name. Yes, it brought me something' (<i>Pharmacist 4</i>).
		Improved patient relationship	'Well, I think one of the most important things is also the contact with your patients. Maybe that's not quite the first goal of the CombiConsultation, but you notice that, after a CombiConsultation or medication review, you're more accessible to patients who have a problem. Actually, I think that's one of the important things' (<i>Pharmacist 1</i>).
		Identifying DRPs	'[...] You always want to find something [a DRP], but you don't always find something. But that does not mean that you didn't help the patient' (<i>Pharmacist 1</i>).
	Reinforcement	Reimbursement	'Particularly, the reimbursement is something that can make the CombiConsultation more difficult to implement in the future. Because if you don't get paid for it and you don't dispense [medicine], it's difficult to do a lot of work for nothing' (<i>Pharmacist 10</i>).
	Intentions/goals	Make time for CombiConsultations	'Sometimes I think I want to plan it more tightly. I would like to allocate two mornings a week for CombiConsultations and medication reviews and completely separate that from the rest of my work' (<i>Pharmacist 1</i>).
Emotion	Job satisfaction	'That you work together with GPs, practice nurses and the patient, that forms a harmonious whole. That you work together, one team, one task, that is a fantastic feeling' (<i>Pharmacist 5</i>).	

a matching TDF domain [7]. Within each domain, main codes have been integrated to form overarching topics, which were discussed within the research group until a consensus was reached. Within each TDF domain, topics were reported with accompanying quotes and mapped to the COM-B (capability—opportunity—motivation—Behaviour) components (Table 2).

Step 2: Questionnaire

Questionnaire construction

The topics derived from the interviews were used to construct a questionnaire. The questionnaire was designed to assess the relevance and generalisability of the identified topics among all 27 CPs who had performed CombiConsultations. Within each TDF domain, statements covering the topics were generated by VM and MH and agreed upon by the research group. The phrasing of the statements is in accordance with the TDF-overarching domains of the COM-B model, aimed at behavioural change [20, 23]: capability, opportunity, and motivation were translated in the questions as ‘able to’, ‘manage to’, and ‘committed to’ respectively (see Figure 1). The questionnaire, based on a 5-point Likert scale, consisted of 19 statements. The topic ‘Improved collaboration between healthcare providers’ was divided into two separate statements: ‘it improves the collaboration with the GP’ and ‘it improves the collaboration with the PN’.

The questionnaire was pilot tested by a CP who was familiar with the CombiConsultation but did not participate in the study.

Recruitment and data collection

The questionnaire was distributed among all 27 CPs who participated in the CombiConsultation intervention study (of whom 10 CPs were also interviewed). CPs were invited by email with a link to a survey. Surveys were completed online via Survalyzer, a secure web-based application. Reminder emails were sent after 3 weeks and questionnaires could only be completed once per participant.

Data analysis

Quantitative survey data were analysed with descriptive statistics. Only complete questionnaires were included.

Ethics and confidentiality

This study was exempted from formal medical ethical approval by the Medical Ethical Committee of the University Medical Centre Utrecht (METC protocol number

17-873/C) and approved by the Institutional Review Board of UPPER, Division of Pharmacoepidemiology and Clinical Pharmacology, Utrecht University (UPF1706; January 2018). All interviewed CPs gave informed consent for the use of the collected data. No data were collected that could link questionnaire data to individual participants. Audio fragments were coded and stored on a secure server. We followed the reporting recommendations for a survey study (CROSS) [24].

Results

Step 1: Interviews

Ten CPs were invited and they were all willing to participate. Saturation was reached after the ninth interview. The pilot participant interview was included in the analysis because no adjustments were needed in the interview guide. The median durations of interviews for CPs was 30 min (range: 24–66 min; IQR: 17.5 min) Table 1 shows the participants’ demographics.

Eighteen topics emerged from the interviews. All topics originated from 12 of the 13 domains of the TDF (Table 2). The domain ‘Beliefs about capabilities’ did not emerge from the interviews. The domains ‘Intentions’ and ‘Goals’ were merged due to the overlap in meaning found within the identified topic.

Four topics were related to the CPs’ capabilities (C), 5 topics were related to the CPs’ opportunities (O) and 10 topics were related to the CPs’ motivation (M) (Table 2). For each topic, a significant quote was presented in Table 2.

Main findings interviews

Within the domain ‘Capability’, the analysis showed that pharmacists have sufficient pharmacotherapeutic knowledge; however, they needed more consultation skills. Also, their daily routine tasks take precedence, which is a barrier for implementation of the CombiConsultation. Within the domain ‘Opportunity’, a good existing collaboration between healthcare providers and access to medical data, a consultation room in the general practice, and the appointment ledger of other healthcare providers are facilitators for the implementation of the CombiConsultation. Scheduling consultations emerged as a barrier for implementation, mainly due to the lack of sufficient staff available. Within the domain ‘Motivation’, the analysis showed that pharmacists must embrace their role as healthcare providers: they think it is their responsibility to answer

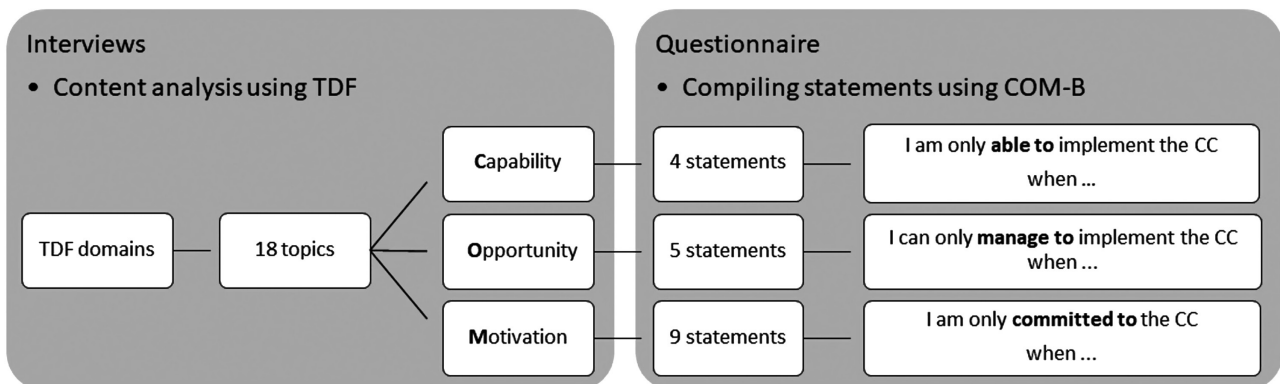


Figure 1. Schematic representation of the study.

Table 3. Number (*n*) and scores (%) of the statements by the participating pharmacists.

	Pharmacists (<i>n</i> = 23)				
	1. Strongly Disagree <i>n</i> (%)	2. Disagree <i>n</i> (%)	3. Undecided <i>n</i> (%)	4. Agree <i>n</i> (%)	5. Strongly Agree <i>n</i> (%)
<i>I am only able to implement the CombiConsultation when...</i>					
<i>I receive more training in consultation skills</i>	0 (0.0)	7 (30.4)	8 (34.8)	8 (34.8)	0 (0.0)
<i>I have more pharmacotherapeutic expertise</i>	1 (4.3)	9 (39.1)	10 (43.5)	3 (13.0)	0 (0.0)
<i>the CombiConsultations are scheduled by another employee</i>	0 (0.0)	3 (13.0)	4 (17.4)	9 (39.1)	7 (30.4)
<i>I can separate myself from daily work in the pharmacy</i>	0 (0.0)	2 (8.7)	4 (17.4)	14 (60.9)	3 (13.0)
<i>I can only manage to implement the CombiConsultation when...</i>					
<i>I have an existing good collaboration with the GP/PN</i>	0 (0.0)	0 (0.0)	0 (0.0)	11 (47.8)	12 (52.2)
<i>I have access to all relevant medical data</i>	0 (0.0)	0 (0.0)	0 (0.0)	11 (47.8)	12 (52.2)
<i>I have access to a consultation room in the general practice at all times</i>	1 (4.3)	7 (30.4)	5 (21.7)	7 (30.4)	3 (13.0)
<i>appointments do not have to be consecutive to those of the GP/PN</i>	0 (0.0)	6 (26.1)	10 (43.5)	5 (21.7)	5 (8.7)
<i>the staffing in the pharmacy is adequate</i>	0 (0.0)	1 (4.3)	4 (17.4)	11 (47.8)	7 (30.4)
<i>I am only committed to the CombiConsultation when...</i>					
<i>I am more visible to patients</i>	1 (4.3)	2 (8.7)	7 (30.4)	10 (43.5)	3 (13.0)
<i>I am allowed to consult with patients who do not qualify for a CMR</i>	2 (8.7)	5 (21.7)	7 (30.4)	6 (26.1)	3 (13.0)
<i>I believe this is the future of pharmacy practice</i>	0 (0.0)	0 (0.0)	4 (17.4)	9 (39.1)	10 (43.5)
<i>I am reimbursed</i>	0 (0.0)	2 (8.7)	2 (8.7)	14 (60.9)	5 (21.7)
<i>it gives me job satisfaction</i>	0 (0.0)	0 (0.0)	0 (0.0)	11 (47.8)	12 (52.2)
<i>it improves the collaboration with the GP</i>	0 (0.0)	1 (4.3)	4 (17.4)	13 (56.5)	5 (21.7)
<i>it improves the collaboration with the PN</i>	0 (0.0)	2 (8.7)	3 (13.0)	13 (56.5)	5 (21.7)
<i>I have (a part of) the day available to carry out CombiConsultations</i>	0 (0.0)	2 (8.7)	10 (43.5)	10 (43.5)	1 (4.3)
<i>the relationship of trust with the patient improves</i>	0 (0.0)	0 (0.0)	5 (21.7)	11 (47.8)	7 (30.4)
<i>I identify drug-related problems at each CombiConsultation</i>	3 (13.0)	11 (47.8)	4 (17.4)	5 (21.7)	0 (0.0)

questions about medication, and the CombiConsultation improves the pharmacist's visibility. Also, the interviews revealed that the implementation of the CombiConsultation improved the contact with other healthcare providers as well as the relationship with the patient. Although it is difficult to continue the CombiConsultation in current daily practice, pharmacists derive job satisfaction from contributing to the well-being of the patient. They expressed their desire for the CombiConsultation to become standard practice in the future.

Step 2: Questionnaire

Out of the 27 CPs invited, 23 completed the questionnaire (61% female). On average, the CPs possessed 12.5 years of professional experience (median: 11.5 years, range: 2–25 years).

Within the domain 'Capability', most of the participants stated that the CombiConsultations should be scheduled by another employee (70%) and that they needed to be able to separate themselves from daily work in the pharmacy (74%) (Scores 1 and 2 [strongly disagree and disagree, respectively] and 4 and 5 [agree and strongly agree, respectively] were combined) (Table 3). One-third (35%) of the participants stated that they need more consultation skills to be able to conduct the CombiConsultation optimally, whereas merely 13% of the participants indicated that they need more pharmacotherapeutic expertise to be able to implement the CombiConsultation.

In the domain of 'Opportunity', all participants (100%) believed that an existing good collaboration with the GP/PN and access to all relevant medical data are necessary to implement the CombiConsultation. Access to a consultation

room in the general practice and consecutive consultations were considered less important (43% and 30%, respectively). Seventy-eight percent of the CPs thought adequate staffing is necessary to implement and continue the CombiConsultation.

The COM-B model shows that within the domain 'Motivation', emotions can drive performance. The topic 'job satisfaction' emerged from the 'emotion' domain and the data showed that the participants only wanted to commit to the CombiConsultation if it gives them job satisfaction (100%). In addition, most participants indicated that they only want to commit to the CombiConsultation if they become more visible to patients (57%), they are reimbursed (82%), it improves the relationship of trust with the patient (78%) and it improves the collaboration with the GP/PN (both 78%). Forty-eight percent of the participants indicated that they would be more dedicated to the CombiConsultation if they have a specific day available. Furthermore, 21% of the participants considered identifying DRPs as a major motivation for conducting CombiConsultations and a minority (39%) of the participants were motivated because they could consult with patients who do not qualify for a CMR.

Discussion

This study identified a wide range of factors relevant to the widespread implementation of the CombiConsultation in clinical practice according to CPs who had experience with performing CombiConsultations. Most participants agreed on the high relevance of good collaboration with the GP/

PN, access to medical data, and the impact of performing a consult on job satisfaction. They attach less importance to the identification of drug-related problems, access to a consultation room in general practice and consultations being consecutive.

Strengths and limitations

The CombiConsultation study was conducted in 21 pharmacies across the Netherlands. By using purposive sampling for the interviews, we achieved a comprehensive representation of the study's participants. We were also able to question almost all participating pharmacists (23 of 27) with the questionnaire. However, investigating the opinion on factors relevant for the implementation of the CombiConsultation among the 27 participants may be not representative for Dutch pharmacy practice because they were all forerunners in the field of pharmaceutical care. So it might create a biased perception of the feasibility of implementing the CombiConsultation a larger scale. However, CPs who do not have experience with CombiConsultations themselves would not have been able to adequately assess the relevance of the identified factors.

On a local level, the participants consider an existing good collaboration with the GP/PN as a critical factor for implementation. Pharmacists who have worked with physicians for a longer period have had more opportunities to demonstrate their competence. This contributes to mutual trust and confidence in the relationship and makes physicians more likely to rely on the CP's expertise [25]. In order to stimulate collaborative practice among GPs and pharmacists, widespread implementation of interprofessional learning for primary care clinicians should be considered [26].

The participants were divided regarding the sequential planning of the CombiConsultation. Although consultations with the CP and GP/PN should preferably take place consecutively, scheduling as such is often not feasible. Based on the interviews, it appears that CPs can also carry out the CombiConsultation if there is more time between the consultations. Due to planning issues, some of the participants even indicated that they could only perform the CombiConsultation if the consultations did not have to be consecutive.

The participants considered access to a consultation room in general practice as less important. Due to a lack of space, it is difficult to organize a consultation room in the general practice. There may be a difference in opinions between the CPs practising in the same health care centre as the GP and CPs who do not, because of the generally more frequent face-to-face contact in a health care centre. What must be considered is that access to a consultation room in general practice could facilitate the access to medical data.

At an individual level, job satisfaction appears to be an important motivator for all CPs. Pharmacists' involvement in clinical services is associated with increased job satisfaction [27, 28]. Pharmacists are usually not (sufficiently) paid for extra care tasks they provide. Pharmacy services are often in addition to pharmacists' regular work, increasing their workload, which has been associated with decreased job satisfaction [29]. Concurrently CP should also make adjustments to certain processes in the pharmacy to create more time for clinical services. Fourteen percent of the pharmacist's time is spent on cognitive pharmaceutical services, which seems to especially compete with dispensing activities and final prescription checks [30]. It seems necessary that CPs delegate or automate some of their traditional

tasks to implement the CombiConsultation. However, CPs are facing growing staff shortages. Therefore, delegation of their tasks is complicated.

At the level of the health system, reimbursement, access to medical data, and sufficient training in consultation skills are important for widespread implementation. Appropriate reimbursement ensures motivation among the CPs and will increase the likelihood of implementation of CombiConsultations. All participants indicated that access to relevant medical data is a critical precondition. This access is needed to properly assess the quality of pharmacotherapy, potentially facilitating more recommendations tailored to the needs of individual patients [31, 32]. Gernant *et al.* showed that CPs who had access to a patient's medical history identified more DRPs and omissions than pharmacists without such access [33]. During this study, most CPs had access to medical data. However, relevant medical data, such as diagnoses, medical history, and laboratory results, are unavailable in most community pharmacies [34] and this might be a barrier for further implementation.

The participants perceived themselves as adequately trained in pharmacotherapy and reasonably proficient in consultation skills. This can be explained by the fact that CPs who signed up for this study are mainly forerunners, who have affinity with pharmaceutical care and who generally were trained to conduct medication reviews. During the CombiConsultation, the CPs initially focussed on patients' needs and concerns, and this requires certain communication skills that many pharmacists are not trained in Ref. [35]. During this study, CPs received consultation training and case-based learning during monthly online meetings. This is likely to have increased their confidence in their own knowledge and skills. Still, one-third of the participants think that they need more training in their consultation skills, indicating that they found such training useful. As the role of the pharmacist as a healthcare provider is becoming increasingly important, investment in training in consultation and clinical reasoning is key.

In addition, adjustments are needed on the level of the health system. Together with stakeholders, reimbursement for consultations, access to medical data, and training in consultation skills should be considered.

Conclusions

This study identified relevant factors that determine the successful implementation of the CombiConsultation. Capability, opportunity, and motivation were considered crucial for the implementation of the CombiConsultation on the level of the individual CP, on the level of the local collaboration and organization, and on the health system level. Widespread implementation will have to focus on interprofessional collaboration, access to medical data, and training in consultation skills (Supplementary material 1&2).

Supplementary Material

Supplementary data are available at *International journal of Pharmacy Practice* online.

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References

- Chisholm-Burns MA, Lee JK, Spivey CA *et al.* US Pharmacists' effect as team members on patient care: systematic review and meta-analyses. *Med Care* 2010;48:923–33. <https://doi.org/10.1097/MLR.0b013e3181e57962>
- Milosavljevic A, Aspden T, Harrison J. Community pharmacist-led interventions and their impact on patients' medication adherence and other health outcomes: a systematic review. *Int J Pharm Pract* 2018;26:387–97. <https://doi.org/10.1111/ijpp.12462>
- International Pharmaceutical Federation. Pharmacy at a Glance—2015-2017. 2017. https://www.fip.org/files/fip/publications/2017-09-Pharmacy_at_a_Glance-2015-2017.pdf (25 August 2024, date last accessed).
- Melton BL, Lai Z. Review of community pharmacy services: what is being performed, and where are the opportunities for improvement? *Integr Pharm Res Pract* 2017;6:79–89. <https://doi.org/10.2147/IPRP.S107612>
- Meijvis HK *et al.* The CombiConsultation: a new concept of sequential consultation with the pharmacist and practice nurse/general practitioner for patients with a chronic condition. *Int J Clin Pharm* 2021;44:580. <https://doi.org/10.1007/s11096-021-01350-y>
- Meijvis VAM, Heringa M, Kwint H *et al.* The CombiConsultation for patients with diabetes, COPD and cardiovascular diseases: evaluation of interventions and personal health-related goals. *Res Social Adm Pharm* 2023;19:1054. <https://doi.org/10.1016/j.sapharm.2023.04.118>
- Meijvis VAM, Heringa M, Kwint H *et al.* Barriers and facilitators for the implementation of the CombiConsultation by general practitioners, pharmacists and practice nurses: a qualitative interview study. *Int J Clin Pharm* 2023;45:970–79. <https://doi.org/10.1007/s11096-023-01597-7>
- Mehralian G, Rangchian M, Javadi A, *et al.* Investigation on barriers to pharmaceutical care in community pharmacies: a structural equation model. *Int J Clin Pharm* 2014;36:1087–94. <https://doi.org/10.1007/s11096-014-9998-6>
- Moullin JC, Sabater-Hernández D, Benrimoj SI. Qualitative study on the implementation of professional pharmacy services in Australian community pharmacies using framework analysis. *BMC Health Serv Res* 2016;16:439. <https://doi.org/10.1186/s12913-016-1689-7>
- Patwardhan PD, Amin ME, Chewning BA. Intervention research to enhance community pharmacists' cognitive services: a systematic review. *Res Social Adm Pharm* 2014;10:475–93. <https://doi.org/10.1016/j.sapharm.2013.07.005>
- Amsler MR, Murray MD, Tierney WM *et al.* Pharmaceutical care in chain pharmacies: beliefs and attitudes of pharmacists and patients. *J Am Pharm Assoc* (1996). 2001;41:850–5. [https://doi.org/10.1016/s1086-5802\(16\)31326-2](https://doi.org/10.1016/s1086-5802(16)31326-2)
- Dunlop JA, Shaw JP. Community pharmacists' perspectives on pharmaceutical care implementation in New Zealand. *Pharm World Sci* 2002;24:224–30. <https://doi.org/10.1023/a:1021526425458>
- Meagen Rosenthal MA, Austin Z, Tsuyuki RT. Are pharmacists the ultimate barrier to pharmacy practice change? *Can Pharm J*. 2010;143(1):37–42.
- Doucette WR, Rippe JJ, Gaither CA *et al.* Influences on the frequency and type of community pharmacy services. *J Am Pharm Assoc* (2003) 2016;57:72–6.e1. <https://doi.org/10.1016/j.japh.2016.08.008>
- Yong FR, Hor S, Bajorek BV. Considerations of Australian community pharmacists in the provision and implementation of cognitive pharmacy services: a qualitative study. *BMC Health Serv Res* 2021;21:1–906. <https://doi.org/10.1186/s12913-021-06838-x>
- Ben Charif A, Zomahoun HTV, Leblanc A *et al.* Effective strategies for scaling up evidence-based practices in primary care: a systematic review. *Implement Sci*. 2017;12:139. <https://doi.org/10.1186/s13012-017-0672-y>
- Weir NM, Newham R, Dunlop E *et al.* Factors influencing national implementation of innovations within community pharmacy: a systematic review applying the Consolidated Framework for Implementation Research. *Implement Sci*. 2019;14:21. <https://doi.org/10.1186/s13012-019-0867-5>
- Creswell JW, Plano Clark VL, Gutmann M, *et al.* *Handbook of Mixed Methods in Social and Behavioral Research*. Thousand Oaks, CA: Sage, 2003, 209–40
- Creswell JW, Plano Clark VL. *Designing and Conducting Mixed Methods Research*. Thousand Oaks, CA: SAGE Publications, Inc., 2007.
- Cane J, O'Connor D, Michie S. Validation of the theoretical domains framework for use in behaviour change and implementation research. *Implement Sci* 2012;7:37. <https://doi.org/10.1186/1748-5908-7-37>
- Saunders B, Sim J, Kingstone T *et al.* Saturation in qualitative research: exploring its conceptualization and operationalization. *Qual Quant* 2018;52:1893–907. <https://doi.org/10.1007/s11135-017-0574-8>
- Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006;3:77–101. <https://doi.org/10.1191/1478088706qp0630a>
- Michie S, van Stralen MM, West R. The behaviour change wheel: a new method for characterising and designing behaviour change interventions. *Implement Sci* 2011;6:42. <https://doi.org/10.1186/1748-5908-6-42>
- Sharma A, Minh Duc NT, Luu Lam Thang T *et al.* A Consensus-Based Checklist for Reporting of Survey Studies (CROSS). *J Gen Intern Med* 2021;36:3179–87. <https://doi.org/10.1007/s11606-021-06737-1>
- Zillich AJ, McDonough RP, Carter BL *et al.* Influential characteristics of physician/pharmacist collaborative relationships. *Ann Pharmacother* 2004;38:764–70. <https://doi.org/10.1345/aph.1D419>
- Cunningham DE, Ferguson J, Wakeling J *et al.* GP and pharmacist inter-professional learning—a grounded theory study. *Educ Prim Care* 2016;27:188–95. <https://doi.org/10.1080/14739879.2016.1163645>
- Yong FR, Hor S, Bajorek BV. Australian community pharmacy service provision factors, stresses and strains: a qualitative study. *Explor Res Clin Soc Pharm* 2023;9:100247. <https://doi.org/10.1016/j.rcsop.2023.100247>
- Olson DS, Lawson KA. Relationship between hospital pharmacists' job satisfaction and involvement in clinical activities. *Am J Health Syst Pharm* 1996;53:281–4. <https://doi.org/10.1093/ajhp/53.3.281>
- Carvajal MJ, Popovici I. Gender, age, and pharmacists' job satisfaction. *Pharm Pract* 2018;16:1396. <https://doi.org/10.18549/PharmPract.2018.04.1396>
- van de Pol JM, Geljon JG, Belitser SV *et al.* Pharmacy in transition: a work sampling study of community pharmacists using smartphone technology. *Res Social Adm Pharm* 2019;15:70–6. <https://doi.org/10.1016/j.sapharm.2018.03.004>
- Freeman CR, Freeman CR, Cottrell WN *et al.* An evaluation of medication review reports across different settings. *Int J Clin Pharm* 2013;35:5–13. <https://doi.org/10.1007/s11096-012-9701-8>
- Hazen ACM, Wal AW, Sloeserwijn VM *et al.* Controversy and consensus on a clinical pharmacist in primary care in the Netherlands.

- Int J Clin Pharm* 2016;38:1250–60. <https://doi.org/10.1007/s11096-016-0360-z>
33. Gernant SA, Zillich AJ, Snyder ME. Access to medical records' impact on community pharmacist-delivered medication therapy management: a pilot from the medication safety research network of Indiana (Rx-SafeNet). *J Pharm Pract* 2018;31:642–50. <https://doi.org/10.1177/0897190017735422>
34. Roberts MF, Reeves K, Divine H. Community pharmacists' lack of access to health records and its impact on targeted MTM interventions. *J Am Pharmacists Assoc* 2019;59:S81–4. <https://doi.org/10.1016/j.japh.2019.04.023>
35. Hazen A, Sloeserwij V, Pouls B *et al.* Clinical pharmacists in Dutch general practice: an integrated care model to provide optimal pharmaceutical care. *Int J Clin Pharm* 2021;43:1155–62. <https://doi.org/10.1007/s11096-021-01304-4>