

ORIGINAL RESEARCH

Exploring the expectations, needs and experiences of general practitioners and nurses towards a proactive and structured care programme for frail older patients: a mixed-methods study

Nienke Bleijenberg, Valerie Hester Ten Dam, Bas Steunenberg, Irene Drubbel, Mattijs E. Numans, Niek J. De Wit & Marieke J. Schuurmans

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Correspondence to N. Bleijenberg:
e-mail: n.bleijenberg@umcutrecht.nl

Nienke Bleijenberg MSc RN
Doctoral Candidate
Julius Center for Health Sciences and
Primary Care, University Medical Center
Utrecht, The Netherlands

Valerie Hester Ten Dam MD PhD
General Practitioner, specialized in elderly
care
Julius Center for Health Sciences and
Primary Care, University Medical Center
Utrecht, The Netherlands

Bas Steunenberg PhD
Associate Professor
Julius Center for Health Sciences and
Primary Care, University Medical Center
Utrecht, The Netherlands

Irene Drubbel MD
Doctoral Candidate
Julius Center for Health Sciences and
Primary Care, University Medical Center
Utrecht, The Netherlands

Mattijs E. Numans MD PhD
Professor General Practice
Julius Center for Health Sciences and
Primary Care, University Medical Center
Utrecht, The Netherlands

Niek J. De Wit MD PhD
Professor General Practice

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Abstract

Aim. To report the expectations and experiences of general practitioners and practice nurses regarding the U-CARE programme, to gain a better understanding of the barriers and facilitators in providing proactive, structured care to frail older people and to determine whether implementation is feasible.

Background. Care for older patients with complex care needs in primary care is fragmented, reactive and time consuming. A structured, proactive care programme was developed to improve physical functioning and quality of life in frail older patients.

Design. An explanatory mixed-methods study nested in a cluster-randomized trial.

Methods. The barriers to and needs for the provision of structured, proactive care, and expectations regarding the U-CARE programme were assessed with pre-questionnaires sent to all participating general practitioners ($n = 32$) and practice nurses ($n = 21$) in October 2010. Postquestionnaires measured experiences with the programme after 5 months. Twelve months later, focus group meetings were conducted.

Results. Practice nurses and general practitioners reported that it was difficult to provide proactive and structured care to older patients with multi-morbidity, different cultural backgrounds and low socioeconomic status. Barriers were a lack of time and financial compensation. Most general practitioners and practice nurses indicated that the programme added value for the coordination of care and allowed them to provide structured care.

Conclusion. This explanatory mixed-methods study showed that general practitioners and practice nurses perceived the U-CARE programme as feasible in

Julius Center for Health Sciences and Primary Care, University Medical Center Utrecht, The Netherlands

Marieke J. Schuurmans PhD RN
Professor of Nursing
Department of Rehabilitation, Nursing Science and Sports Medicine, University Medical Center Utrecht, The Netherlands

general practice. A transition was made from reactive, *ad hoc* care towards a proactive and preventive care approach.

Keywords: frailty, general practitioner, older people, practice nurses, primary care

Introduction

Care for older people with complex needs is often fragmented, reactive, and time-consuming (Bodenheimer 2008, De Lepeleire *et al.* 2009, Boulton & Wieland 2010). The increasing numbers of older people with multi-morbidity, functional disabilities, and complex care needs challenge healthcare providers, particularly primary care providers, to provide coordinated and structured care (Fortin *et al.* 2007, Bodenheimer 2008, Norris *et al.* 2008, Mercer *et al.* 2009, Winker 2010). To reduce healthcare costs and improve care, a transition towards a proactive, structured approach is needed (Mercer *et al.* 2009, Glynn *et al.* 2011).

Various 'complex' interventions in primary care have been developed to enhance care for older patients by supporting physical functioning and maintaining independent living (Beswick *et al.* 2008, Huss *et al.* 2008, Melis *et al.* 2010). Complex interventions include multiple interacting components that act both independently and interdependently and are flexible and tailored to the population (Campbell *et al.* 2007, Craig *et al.* 2008). Unfortunately, randomized controlled trials of complex interventions often focus only on pre-specified health outcomes and not on the process of implementation (Oakley *et al.* 2006). An evaluation of the intervention alongside a trial of other outcomes such as on the provider level is recommended to understand the different components and the barriers to and facilitators of new interventions from this perspective (Oakley *et al.* 2006, Campbell *et al.* 2007, Craig *et al.* 2008).

New care models and programmes require new roles and work processes for healthcare providers (Marsteller *et al.* 2010); therefore, the barriers to and facilitators of an intervention should be identified to improve the intervention and its implementation in clinical practice (Oakley *et al.* 2006, Reelick *et al.* 2011). A multi-faceted and integrated approach using both quantitative and qualitative research techniques is particularly useful in the evaluation of complex interventions that involve social or behavioural

processes that are difficult to explore using quantitative methods alone (Campbell *et al.* 2007, Lewin *et al.* 2009). This approach will provide a more in-depth understanding of how providers experience the new intervention and what difficulties might occur when implementing the intervention in clinical practice. Therefore, this study evaluates a complex intervention programme at the level of the providers.

Background

There has been little consensus on how primary care providers can address the needs of older patients (De Lepeleire *et al.* 2009, Boulton & Wieland 2010). However, elements that were demonstrated to be promising are preventive home-visiting programmes with a comprehensive geriatric assessment (CGA), a multi-disciplinary and multi-factorial approach with tailor-made interventions, and long-term follow-up (Beswick *et al.* 2008, Boulton *et al.* 2009, Daniels *et al.* 2010). On the basis of previous evidence, we combined all potentially successful components and developed an innovative structured and proactive care programme (U-CARE) to preserve physical functioning and to improve quality of life in frail older patients. The U-CARE programme is currently being tested and implemented in a large, three-armed cluster-randomized trial, the Utrecht Primary care Proactive Frailty Intervention Trial (U-PROFIT), which includes 57 participating primary care practices, 122 general practitioners (GPs), 21 specially trained registered practice nurses (PNs), and 3235 patients (Bleijenbergh *et al.* 2012).

The U-CARE programme

The U-CARE programme involves three steps: a frailty screening, a home-based CGA based on a patient needs approach and a tailor-made care plan with evidence-based and best practice interventions developed by the PN in collaboration with the GP. The U-CARE programme was developed by a multi-disciplinary team of researchers and practitioners in nursing and primary care to enhance its

quality and feasibility in clinical practice. For 10 highly prevalent geriatric conditions in older patients, evidence-based care plans were developed to guide PNs and ensure structured care. The CGA and care plans were developed by the research team, PNs, and experts. Patients included in the programme were aged 60 years or older and were selected using a software application that explores the EMR (electronic medical records) for patients meeting any of the following three criteria: polypharmacy, defined as the chronic use of five or more different medications; multi-morbidity (defined by a Frailty Index score); or a care gap, defined as not having consulted a GP in the past 3 years, except for the yearly influenza vaccination (Bleijenberg *et al.* 2012).

In clinical practice, the PN will send the frailty assessment to eligible patients. If necessary, the nurse will help the patient complete the questionnaire. In addition to conducting a CGA and developing an evidence-based care plan, the PN will coordinate and proactively monitor the care of the patient and will focus on the needs of the patient in close collaboration with the GP and other disciplines. Furthermore, the PN will provide caregiver support and facilitates access to community resources, such as home-delivered meals, medication delivery at home, and transport services. In the Netherlands, no structured and proactive programme has been widely adopted and nurses visit patients at home on a reactive, *ad hoc* approach. Moreover, not all GPs collaborate with PNs. In the U-CARE programme, the nurses have a pro-active, structured way of working that emphasizes case management. A description of the development of the U-CARE programme has been given elsewhere (Bleijenberg *et al.* 2013).

All GPs and PNs in the U-CARE intervention group received an obligatory 3-hour training session 1 month prior to the start of the programme. All PNs participated in an extended education programme of 8 hours per week for a period of 5 weeks. During this training programme, the frailty assessments, CGA, and evidence-based care plans were discussed. The training programme was developed by a multi-disciplinary faculty team in collaboration with the Utrecht University of Applied Sciences in the Netherlands. In addition, monthly education and supervision meetings with the PNs were scheduled during the trial, which provided ongoing learning, support, role clarification, problem-solving, feedback, and networking.

General practitioners and PNs providing the U-CARE intervention have to make the transition from reactive and *ad hoc* care to a structured and proactive care approach. Therefore, an in-depth understanding of the barriers to and facilitators of the intervention at the

provider level is needed to optimize the intervention and its implementation.

The study

Aim

The aim of this study was to explore the expectations, needs and experiences of GPs and PNs with respect to the U-CARE programme, to gain a better understanding of the barriers and facilitators in providing proactive and structured care to frail older people in primary care, and to determine whether implementation is feasible.

Design

An explanatory, sequential, mixed-methods design was used (Ivankova *et al.* 2006, Johnson *et al.* 2007, Morgan 2007). Quantitative data were collected at two moments in time using a questionnaire. Qualitative data were collected during two focus group meetings.

Participants and setting

Thirteen primary care practices participated in this study, including 32 GPs and 21 PNs, randomized into the U-CARE intervention group in the U-PROFIT trial. All primary care practices were located in and around Utrecht, the Netherlands.

Data collection

Barriers, limitations, needs, expectations, and experiences related to the U-CARE programme were measured using pre- and postquestionnaires. Pre-questionnaires were sent in October 2010 and postquestionnaires were sent 5 months after the intervention began in the primary care practice. Focus group meetings were conducted to explore the views of the GPs and PNs 12 months later.

Questionnaires

Limitations, barriers, and needs with respect to the provision of structured and integrated care for older patients in general practice and expectations of the U-CARE programme were identified using pre-questionnaires adapted with minor revisions from Van Eijken *et al.* (2008). The pre-questionnaires were sent after the first training session, 1 month prior to the start of the U-CARE programme. The postquestionnaire identified perceived limitations and barriers to the proper execution of the programme and

investigated participants' experiences with the programme. The questionnaires were derived from a structured list of barriers and facilitators (Peters *et al.* 2003) and were tested for content validity by a group of experts (Van Eijken *et al.* 2008). The questionnaires included background variables, limitations in current care for older patients, needs in current care for older patients, expectations and experiences of the U-CARE programme, and expectations of the added value of the included geriatric conditions in the CGA. All questions were measured on a five-point Likert scale, ranging from 5 (strongly agree)–1 (strongly disagree).

Focus group meetings

Twelve months after the programme started, focus group meetings were conducted to explore the opinions and experiences of the GPs and PNs. Separate groups were held to create a safe and homogeneous group for both disciplines (Kitzinger & Barbour 1999). A subgroup of GPs and PNs were invited to participate. This subgroup was a representative sample of the total group of both types of practitioners with respect to general practice characteristics. Therefore, we selected a heterogeneous group of GPs and PNs that differed in years of experience in primary care, the practice size where they worked, and the social geographical area of the general practice because the socioeconomic status (SES) of a patient may be a potential effect modifier. GPs and PNs were contacted by email by the researcher. The first author (NB) wrote the protocol, selected topics from the most interesting results of the questionnaire for discussion, observed, took notes, and handled the technical equipment. The moderator (BS) performed the consent process for the protocol, introduced the groups, and led the discussion. A member of the research team (VHD) observed the discussions. Two focus group meetings were conducted. At the beginning of each focus group meeting, the results from the questionnaires were presented to stimulate the discussion. The GPs and PNs chose the items to be discussed. If needed, the moderator suggested topics from the protocol to ensure that all predefined topics were discussed.

Ethical considerations

This study is nested in a three-armed cluster-randomized trial approved by the Institutional Review Board of the University Medical Center Utrecht with protocol ID 10-149/O. The questionnaires were analysed anonymously and audio-recorded verbal consent was acquired at the beginning of each focus group.

Data analysis

Descriptive analyses of quantitative data were performed with the Statistical Package for the Social Sciences (SPSS version 17.0; Chicago, IL, USA). Continuous data were represented as means with corresponding standard deviations and as medians and interquartile ranges for data with a non-normal distribution. Categorical data were represented as numbers with the corresponding percentages of GPs and PNs who agreed and strongly agreed with an item on the questionnaire. The focus group interviews were audio taped and transcribed verbatim to allow for systematic analysis (Kitzinger 1995).

Rigour

To increase the validity and reliability of the qualitative data, content validity was ensured by member checking, obtaining agreement from the participating GPs and PNs by sending session summaries after the conclusion of the groups. The transcripts were studied by two independent researchers (NB and VHD) repeatedly and themes were identified from open coding of the data. Differences in themes were resolved through discussions with BS, VHD, and NB. Subsequently, the main issues for each topic were identified. The data were studied in a transparent and systematic way using triangulation, segmenting, and reassembling (Boeije 2009). The quantitative and qualitative results were used in the interpretation of the results to increase validity.

Results

Questionnaires

A high response rate was demonstrated among GPs and PNs: 20 of 21 PNs (95.2%) and 27 of 32 GPs (87.5%) participated (Table 1).

Focus groups

Six PNs and five GPs participated in the focus groups, which lasted approximately 2 hours (Table 1). One invited GP cancelled the meeting for personal reasons. All GPs and PNs knew each other, facilitating a lively discussion. During the focus group meetings, the following discussion themes were identified: programme characteristics, patient care, quality of life, time (GPs), and work satisfaction (PNs). Quotes are presented to illustrate the various perspectives.

Table 1 Characteristics of GPs and PNs.

Characteristics questionnaires	GPs (<i>n</i> = 27)	PNs (<i>n</i> = 20)
Age, median (IQR)	55 (49–57)	46.5 (37–52)
Female, <i>n</i> (%)	15 (55.5)	19 (95.2)
Work experience in years, median (IQR)	25 (18–30)	17 (7–30)
Working in general practice size (>2400 patients), <i>n</i> (%)	20 (74.1)	11 (55)
Characteristics focus group	GPs (<i>n</i> = 5)	PNs (<i>n</i> = 6)
Female, <i>n</i> (%)	2 (40)	6 (100)
Work experience, median (range)	28 (25–35)	17 (4–40)
General practice size (>2400 patients), <i>n</i> (%)	3 (60)	4 (67)

Limitations, barriers, and needs in the provision of structured care to older patients – GPs

In the pre-questionnaire, a majority of the GPs indicated that a barrier to providing structured care was a lack of well-educated PNs and financial compensation to develop this care. The results of the postquestionnaire showed that GPs experienced more barriers and difficulties in providing structured care to older patients with multi-morbidity, patients with a different cultural background and patients with low SES than reported prior to the start of the intervention (Table 2). The GPs explained during the focus group: ‘...It is just simple with all these items: because of the U-CARE programme, we see these patients more often now. They are visible now. Before the programme we were not confronted with these patients. However, I am more aware of this type of patients now.’

Limitations, barriers, and needs in the provision of structured care to older patients – nurses

One of the limitations in the provision of structured care that was quantitatively reported by the PNs is a dearth of healthcare staff (Table 2). On the postquestionnaire, approximately 70% of the PNs reported that they needed more regular contact with other PNs and the GP to perform the U-CARE programme properly:

...Since the U-CARE program, the role of the GP has changed. Currently, the GP is more involved. We discuss the outcomes of the frailty screening. More things are visible for the GP

...The role of the GP is very important in how I can deliver and organize the care for older patients. The vision of the GP regarding proactive and structured care is essential here

Expectations and experiences of the U-CARE programme – GPs

Programme characteristics. A majority of the GPs indicated on the questionnaires that the U-CARE programme ‘enables them to address geriatric conditions in a structured manner’, ‘is an added value for the coordination of care’, and ‘focuses on the major geriatric problems’ (Table 3):

...Because of the U-CARE program, care for older patients is more structured, people are more visible and there is more continuity now.

...Since U-CARE, I conduct fewer home visits than before, partly due to the home visits of the practice nurse. I think we can prevent things now and we are detecting more. The practice nurse is accessible; it’s about care and not cure. People talk easier to her and I really make use of it.

Patient care. GPs indicated the following on the questionnaires: the programme will improve patients’ satisfaction with care and leaves enough space for the opinion and wishes of the patient (see Table 3). During the focus group, the GPs highlighted the added value of the U-CARE programme:

...Due to the U-CARE programme and the home visit by the practice nurse, the focus is on patients’ needs and the problems that they experience because there is more time.

...It gives people the feeling that someone really cares for them – a warm feeling.

...Our patients who participate in the study are very satisfied with the U-CARE program.

Quality of life. Half of the GPs questioned whether the U-CARE programme would improve patients’ quality of life and whether the positive experiences of patients in the programme were measurable (Table 3):

...Sometimes there are some questions that need some time for consideration, for example, a hospitalization procedure, that type of thing. I am wondering if that is really measurable on the patient’s quality of life

...The whole part of care in this programme looks past today; it is a long process that will continue

Time. Prior to the start of the programme, 70% of the GPs expected that the U-CARE programme would be

Table 2 Limitations and barriers to the provision of structured and integrated care, n (%).

Limitations	GPs pre (n = 27)	GPs post (n = 27)	PNs pre (n = 20)	PNs post (n = 18)
<i>Current limitations are caused by</i>				
...the lack of healthcare staff	10 (37)*	9 (33.3)*	15 (75)*	11 (61.1)*
...the lack of time for coordination and geriatric assessment	16 (59)	17 (63)	17 (85)	9 (50)
...nurses or doctors who are not educated to perform specific geriatric function and care research	6 (22.2)	5 (18.5)	12 (60)	10 (55.6)
...nurses or doctors who have inadequate knowledge to perform and interpret a geriatric screening and assessment	6 (22.2)	5 (18.5)	13 (65)	9 (50)
...nurses or doctors who are not aware enough of the possibilities of care coordination	9 (33.3)	7 (25.9)	4 (20)	4 (22.2)
...older patients who are not motivated for treatment	2 (7.4)	5 (18.5)	1 (5)	3 (16.7)
<i>GPs perspective</i>				
...older patients have less treatment adherence	1 (3.7)	2 (7.4)	-	-
...lack of a well-educated practice nurse	7 (25.9)	1 (3.7)	-	-
...no financial compensation to develop this care	20 (74.1)	12 (44.4)	-	-
<i>PNs perspective</i>				
...nurses have fewer tools and time to guide older patients in treatment adherence	-	-	11 (55)	7 (38.9)
...nurses are not sufficiently educated to investigate the care needs of older patients	-	-	7 (35)	4 (22.2)
...collaboration with the GP is poor	-	-	1 (5)	3 (16.7)
<i>Barriers</i>				
<i>To provide care to older patients is difficult when patients...</i>				
have a different cultural background	17 (62.9)	21 (80.8)	12 (60)	12 (66.7)
are predominantly healthy	6 (22.2)	13 (48.1)	4 (20)	5 (27.8)
have a low socioeconomic status	12 (44.4)	17 (63)	8 (40)	2 (12.5)
have multimorbidity	17 (63)	18 (66.7)	5 (25)	4 (22.2)
are above 85 years	1 (3.7)	3 (11.1)	-	-
are male	1 (3.7)	1 (3.7)	-	-
are female	1 (3.7)	0	-	-
visit the general practice often	4 (14.8)	3 (11.1)	-	-
visit the general practice infrequently	13 (48.1)	12 (44.4)	-	-
Needs of GPs and PNs				
<i>To execute the U-CARE programme properly, I think I need...</i>				
more knowledge about geriatric problems	12 (44.4)	13 (48.1)	9 (45)	8 (44.5)
more transparency about referral possibilities	18 (66.7)	15 (55.6)	10 (50)	7 (38.9)
more knowledge about specific diagnostic tests for older people	19 (70.4)	16 (59.3)	7 (35)	9 (50)
regular contact with other practice nurses	11 (40.7)	11 (40.7)	11 (55)	13 (72.3)
regular contact with community nurses	-	-	14 (70)	8 (44.5)
regular contact with GPs	-	-	11 (55)	12 (66.7)

*Percentage presented reflects both agreed and strongly agreed.
 - indicates that the item was not asked.

Table 3 Expectations of and experiences with the U-CARE programme for GPs and PNs, *n* (%).

Domains	GPs		PNs	
	GPs pre (<i>n</i> = 27)	GPs post (<i>n</i> = 27)	PNs pre (<i>n</i> = 20)	PNs post (<i>n</i> = 18)
Knowledge and organizational				
<i>The U-CARE programme...</i>				
...enables me to address geriatric problems in a structured manner	23 (85.2)	24 (88.9)	17 (85)	14 (77.8)
...is clear about the professional responsibilities towards patient care for the GP and nurse	16 (59.3)	17 (63)	10 (50)	10 (55.6)
...creates care that was not available before	17 (63)	15 (55.5)	9 (45)	9 (50)
...is too complex	2 (7.4)	6 (22.2)	0	4 (22.2)
...provides enough freedom to make my own decisions	16 (59.3)	23 (85.2)	16 (80)	15 (83.3)
...looks similar to my current job/as my job before	9 (33.3)	10 (37)	10 (50)	7 (38.9)
Patient care				
<i>The U-CARE programme...</i>				
...considers the individual characteristics of patients	17 (63)	20 (74.1)	17 (85)	11 (61.2)
...focuses on the major geriatric problems of older patients	20 (74.1)	22 (81.5)	18 (90)	16 (88.9)
...acknowledges the opinions and wishes of the patients	17 (63)	21 (77.8)	16 (80)	16 (88.9)
...is an added value for quality patient care	19 (70.4)	19 (70.4)	15 (75)	11 (61.2)
...will improve patient compliance	13 (48.1)	14 (51.9)	10 (50)	5 (27.8)
...will improve patient satisfaction with care	16 (59.2)	19 (70.4)	16 (80)	14 (77.8)
...will improve patients' quality of life	13 (48.1)	15 (55.6)	14 (70)	9 (50)
PNs perspective				
<i>The U-CARE programme...</i>				
...provides the opportunity to extend the profession of the nurse	–	–	16 (80)	15 (83.3)
...requires the support of the GP in planning and performing nursing care	–	–	3 (15)	7 (38.9)
...requires the support of the nurse in planning and performing nursing care	–	–	19 (95)	16 (88.9)
...the GP is too uninvolved in the programme	–	–	0	4 (22.2)
...would be more easily performed if there was more time for re-education (nurse)	–	–	1 (5)	1 (5.6)
...will improve my work satisfaction	–	–	12 (60)	7 (38.9)
...makes it difficult to perform goal-setting together with the patient	–	–	0	1 (5.6)
GPs perspective				
<i>The U-CARE programme...</i>				
...lacks an understanding of important geriatric problems	1 (3.7)	3 (11.1)	–	–
...will not be supported by patients	2 (7.4)	3 (11.1)	–	–
...will yield a positive experience for patients, but this positivity is most likely not measurable	17 (63)	12 (44.4)	–	–
...provides a decrease in task burden	17 (63)	14 (51.8)	–	–
...is time-consuming	19 (70.4)	15 (55.5)	–	–
...is an added value by offering re-education (GP)	15 (55.5)	9 (33.3)	–	–
...is an added value for the coordination of care	21 (77.8)	24 (88.9)	–	–
...is an added value by offering possibilities for additional diagnostic assessments for older people	17 (63)	13 (48.1)	–	–

*Percentage presented reflects both agreed and strongly agreed.
 – indicates that the item was not asked.

time-consuming; after 5 months, this had decreased to 56%. Time gain was discussed during the focus group:

...In my opinion, I think the time benefit is equal because sometimes the nurses prevent some home visits, but on the other hand, sometimes they arrange for additional home visits because they detected deviations for which we are responsible

...It is not a decrease in tasks but a shifting in tasks. I am more of a manager now. Direct patient care has decreased

Expectations and experiences of the U-CARE programme – nurses

Patient care. A majority of the PNs had high expectations and positive experiences regarding the following questionnaire items: the programme considers enough space for the opinions and wishes of the patient, the programme focuses on the major geriatric health problems and the programme will improve patient satisfaction with care.

...Due to the new evidence-based care plans, I think we can improve care - for example, on the conditions of incontinence, depression and loneliness. The care plans provide new insights

...Patients find that they get more time and attention. Care is more accessible. Patients are surprised when I take my jacket off

Quality of life. Some PNs became less positive on the following questionnaire items: the programme will improve patients' quality of life and the programme is an added value for the quality of patient care:

...Quality of life is hard to improve. Perhaps we think it is easy; however, older patients experience difficulties in accepting their decline.

...I am wondering whether the nursing interventions are measurable on a patient quality of life questionnaire. Do we see a change after one year?

Work satisfaction. After 5 months of working with the U-CARE programme, fewer PNs reported on the questionnaire that the programme would improve their work satisfaction in contrast to their expectations prior to the start. During the focus group, all PNs highlighted that the programme had increased their work satisfaction. PNs emphasized that due to the new proactive and preventive approach, their role had changed:

...The decrease in work satisfaction occurred because when I received the second questionnaire (which measured the experiences),

the proactive approach of visiting patients based on the frailty screening was new for me

...Well, that (a decrease in work satisfaction) was just in the beginning. It was difficult to get a place in the general practice because care for older patients was already well arranged. It made me insecure; however, that feeling has changed completely. My work satisfaction is very positive now

Additionally, the PNs mentioned that it took some time to visit all patients with complex care needs and structure their care. The PNs argued that the outcome of the geriatric screening differed at times from the actual situation at home. Sometimes they visited healthy older patients who were considered frail by the frailty assessment, whereas some frail patients did not need help because all possible care was already arranged. Some nurses emphasized that they felt helpless at times when those patients rejected highly needed care:

...Sometimes it was very difficult because I knew that other types of care were needed, but the patient did not accept any care. On one hand, I feel responsible for the patient, but on the other hand, I know that I do not have enough knowledge and 'know how' to do something about the situation

Discussion

In this study, we examined the expectations and experiences of GPs and PNs with respect to the U-CARE programme to gain a better understanding of the barriers and facilitators related to providing proactive and structured care to frail older people in primary care and to determine whether implementation is feasible in general practice. Primary care practitioners are facing a growing number of frail older people with multi-morbidity and complex care needs (Fortin *et al.* 2007, Mercer *et al.* 2009). One of the many challenges in primary care is the provision of structured and well-coordinated care (Fortin *et al.* 2007, Mercer *et al.* 2009, Bower *et al.* 2011, Glynn *et al.* 2011). The GPs in our study reported difficulties in providing coordinated care to frail older patients due to a lack of time. This finding is in line with a recent qualitative study that has shown that primary care professionals identify the same challenges in care for multi-morbid patients (Bower *et al.* 2011). Furthermore, prior to the start of the intervention in general practice, GPs indicated that another limitation was a lack of a well-educated PN and no financial compensation to provide this care. After 5 months, this limitation was no longer an issue because the nurses were employed by the research

project and not by the GP. Before the start of the project, the nurses were well trained. To enhance and stimulate good collaboration between the nurses and GPs, a training session was set up prior to the implementation of the intervention. During the development of the intervention and the trial period, a prominent health insurance company in our region was involved to ensure reimbursement of the U-CARE intervention if the results are convincing.

Van Eijken *et al.* (2008) described barriers to and facilitators of a community-based geriatric intervention programme (Dutch Geriatric Intervention Program, DGIP) reported by GPs, nurses, geriatricians, patients, and caregivers with respect to implementation (Van Eijken *et al.* 2008). In our study, we used the same questionnaires as those of van Eijken and colleagues. Therefore, a comparison at the level of the GPs and nurses was possible. The GPs in our study experienced the same limitations in the provision of structured care as the physicians from van Eijken's study on the topics of 'time' and 'lack of knowledge'. However, both groups of GPs mentioned that the programme required less time than expected (Van Eijken *et al.* 2008).

The PNs of our study indicated the same positive experiences as the nurses in the study by Van Eijken *et al.* (2008). Both groups of nurses felt that the programmes enabled them to address geriatric problems in a structured manner and that the programme will improve patient satisfaction with care. Half of the PNs in this study questioned whether the programme was beneficial for all patients. An evaluation study of a Dutch home visiting programme for older people investigated the compliance and experiences of patients and nurses showed the same results. The nurses were uncertain about the programme's effectiveness for patients who were not motivated, were less open to change or had little knowledge of relevant problems (Bouman *et al.* 2008). The same barrier was found in a qualitative study of the experiences of doctors and nurses towards implementing a nurse-delivered cardiovascular prevention programme in primary care (Voogdt-Pruis *et al.* 2011).

After 5 months, the PNs were less positive about whether this programme would improve their work satisfaction. They mentioned that they initially had feelings of uncertainty. PNs were not used to providing care on a proactive approach and to focusing on patients' needs based on the outcome of a structured frailty assessment. As expected, this feeling was replaced by feelings of self-confidence after 12 months. The PNs in our study had to make a transition from a reactive approach to a proactive care approach as well as a transition from an *ad hoc* to a highly structured care approach. The findings from the literature regarding role transition in nursing have shown similar results (Foret

Giddens *et al.* 2009). Furthermore, the adaptation of the intervention by PNs requires time.

Implications

In this study, we focused on gaining a better understanding of the barriers and facilitators to providing proactive and structured care to frail older people in primary care using a mixed-methods procedure, which is often lacking in complex, multi-component intervention studies (Oakley *et al.* 2006, Craig *et al.* 2008, Reelick *et al.* 2011). These findings may help GPs or primary care practices decide whether to adopt the U-CARE programme (Marsteller *et al.* 2010, Dixon-Woods *et al.* 2011). A mixed-methods procedure was used to gain an in-depth understanding of how providers experience the U-CARE intervention and what difficulties might occur when implementing the intervention in clinical practice. Surprisingly, it remains relatively uncommon in trials of complex interventions to include qualitative data (Lewin *et al.* 2009). Exploring the expectations, experiences and barriers, and facilitators of an intervention may contribute to an optimal implementation strategy (Van Achterberg *et al.* 2008), which may enhance the implementation once the effectiveness has been established.

The results of this study show that implementation of proactive care programmes in clinical practice is complex by nature. To improve implementation, we have defined five preconditions that must to be fulfilled based on our results. First, the providers of the new intervention must be well educated and trained. Second, to enhance the quality and feasibility of a new care programme in clinical practice, the providers of the intervention must be involved during the development phase of the intervention. Third, financial compensation for the proactive preventive care is required. Fourth, good collaboration between GPs and PNs is needed to improve care for older people. Fifth, it is important for researchers and innovators to acknowledge that it takes time for new care programmes or models to be adapted by providers and to ensure that the intervention works in the most efficient and effective way (Oakley *et al.* 2006).

Study limitations

To appreciate these results, a few limitations need to be considered. Although we had a high response rate, the low number of GPs and PNs participating in this study makes the generalizability of the results difficult. Only one focus group meeting was conducted for both disciplines. It can be questioned whether more focus group meetings might have been more appropriate. However, the researchers assessed

What is already known about this topic

- Care for older patients with complex care needs in primary care is fragmented, reactive, and time-consuming.
- It is unknown how primary care can provide optimal care to frail older people.

What this paper adds

- Practice nurses and general practitioners reported that it is difficult to provide proactive, and structured care is difficult to older patients with multi-morbidity, with a different cultural background and patients with a low socioeconomic status.
- Practice nurses highlighted that the role of the general practitioner in delivering and organizing proactive and structured care for frail older people is important.
- General practitioners and practice nurses indicated that the U-CARE programme enables them to provide proactive and structured care and added value for the coordination of care, may prevent patient problems, and is feasible in general practice.

Implications for practice and/or policy

- A mixed-methods evaluation of a complex intervention at the provider level can provide valuable insights into the barriers and facilitators of this intervention, which may enhance its implementation.
- A transition towards a proactive and structured care approach requires a good training programme, close collaboration of general practitioners and practice nurses, and time for adaptation by providers.

that saturation was reached after the first meeting. Another limitation of the study is the short follow-up period of 5 months between the pre- and postquestionnaire. During the focus group meetings, the PNs mentioned that they initially some difficulties and problems with their new role; therefore, their work satisfaction had decreased. However, the focus group meetings after 12 months led to an explanation for this decrease after 5 months. The effectiveness of the U-CARE programme with regard to physical functioning and quality of life is being tested in the U-PROFIT trial. The results of the trial are expected in spring 2013. It can then be determined whether a study of expectations and experiences is needed in this phase. However, to prevent bias in interpreting the results (Oakley *et al.* 2006), we believe that the current study is appropriate at this stage. If

the GPs and PNs were already aware of the outcome of the trial, the results of the focus group meetings would have been biased. Furthermore, the results clarify what is needed to adopt the intervention in clinical practice (Dixon-Woods *et al.* 2011).

Conclusion

Prior to the start of the U-CARE programme in general practice, the GPs had neutral expectations regarding the U-CARE programme. These expectations became more positive after 5 months and became highly positive after 12 months. The PNs had very high expectations prior to the beginning of the programme, were somewhat less positive after 5 months, and then became positive again after 12 months. Although the intervention requires time before it will be adopted, a transition was made in both disciplines from reactive and *ad hoc* care to a proactive and more preventive care approach. A majority of the GPs and PNs believed that the U-CARE programme provide added value for the coordination of care; it focuses on the major geriatric health problems and it enables them to address these problems in a structured manner. Based on these results, the GPs and PNs perceived the U-CARE programme as feasible in general practice. A mixed-methods procedure contributes to a more in-depth understanding of the barriers and facilitators of a proactive structured care programme. This study has increased our knowledge regarding the needs and experiences of GPs and PNs in providing proactive and structured care to frail older people in primary care.

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Conflict of interest

No conflict of interest had been declared by the authors.

Author contributions

All authors have agreed on the final version and meet at least one of the following criteria [recommended by the IC-MJE (http://www.icmje.org/ethical_1author.html)]:

- substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data;
- draughting the article or revising it critically for important intellectual content.

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