Patient satisfaction in innovating integrated care for older persons : towards care with personal value

Poot, A.J.

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ANTONIUS J. POOT

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Antonius J. Poot
Department of Public Health and Primary Care of the Leiden University Medical Center

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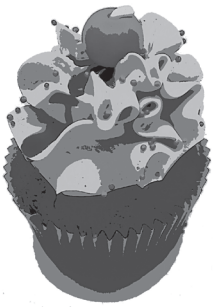
Chapter 1

General introduction



Medical care for older persons is changing. (1,2) This is partly a consequence of the challenges presented by changes in demography and society, which became apparent during the 20th century and are expected to continue. (3,4) These challenges apply at both a policy level and at the level of healthcare provision. Due to the increasing number and proportion of older persons, the challenges related to policy are mainly concerned with capacity and finance. (5) The challenges for the actual provision of health care is also related to capacity. In addition, this implies changes for daily practice, such as an increasing number of treatable chronic diseases within the same individual. There is also a shift to more attention for quality of life and comfort in the aging population; this is the ultimate goal and encompasses more than merely the absence of disease. (6,7) These changes have led to new care models and paradigm shifts which come together in the concept of 'person-centered, integrated care'. (8) This implies that new forms of cooperation are required within and between the medical and welfare domains, and between the professional and informal caregivers. (9)

In the Netherlands, the combination of policy and the wish of older persons to grow old in the community means that it is particularly in primary care that the challenges of an aging society are met. Traditionally the general practitioner (GP) was the sole coordinator of primary health care, as well as the gatekeeper for secondary health care. Nowadays, since the GP is no longer the only player in the provision of person-centered integrated care in the community, meeting the present challenges is now considered a team effort.

The case of Mr and Mrs P. (described below) illustrates the double meaning of changing care, in that it is not only the situation which has changed but that there is also an active process of changing care for the better, i.e. a continual progress. This is called innovation.

Changing care

Care in 1986

Mr and Mrs P. are a couple in their eighties, living in a village in the western part of the Netherlands. Mr P. (a retired accountant) suffers from diabetes and general vascular problems whereas Mrs P. is relatively fit physically but suffers from early symptoms of dementia. They live contentedly in the house where they raised their two children, happy with each other and the daily routine of their modest lifestyle. A domestic help (a lady who is not much younger than the couple) comes to clean the house, and help with the shopping and preparation of meals. Their children are well educated, have their own families and demanding careers, and live in different parts of the Netherlands. For Mr and Mrs P., their only activities outside the house are a weekly visit to the church and to the bridge club in the local community center. Although this routine has been followed for many years,

it was recently disrupted because Mr. P had to undergo amputation of an ischemic toe. He was admitted to hospital for a few days and then discharged home, but unable to move from his chair without help.

The village has three general practitioners (GPs) and Mr and Mrs P. have been patients of one of these GPs since he started his practice many years ago. Mr P. had been discharged on a Friday and, when the GP made a home visit on the following Monday, he encountered a distraught and squabbling couple. Due to the increased demands on Mrs P. it became apparent that her dementia had deteriorated to such an extent that she could no longer function adequately in the household. For example, yesterday she had put the kettle on to make tea but had become distracted and had left the gas burning. The GP has now planned a visit to coincide with a visit from the community nurse who has come to attend to the husband's foot wound. Their daughter is also present. Problems and practical solutions are discussed while sitting at the kitchen table, and actions are planned and allocated.

Care in 2017

Before Mr P.'s discharge, a social worker employed by the hospital contacts the village's GP medical center as well as a community social worker who is part of a social care team (*sociale wijk team*), to initiate the necessary home care. Wound care is initiated via a home nursing organization which is related to the same organization that the hospital belongs to. In the GP medical center, one of the five GPs has a discussion with the practice nurse who runs the diabetes and cardiovascular program, and also with the practice nurse who runs the geriatric care program. Since the diabetes/cardiovascular nurse only knows Mr P. from his visits to the practice for the respective prevention programs and the geriatric nurse has visited the couple at home in the past, and also because Mrs. P. has been diagnosed with dementia, it is decided that the geriatric nurse will follow-up the case. She plans a home visit to make an inventory of the care needs situation and to coordinate activities. She contacts the council social worker who has also visited the couple and plans a Skype conversation with the daughter. A care plan is made and discussed with the elderly care physician who regularly advises the GPs. It is decided to involve a dementia case manager, domestic care, 'meals on wheels', and to initiate an account in the digital case documentation & communication module. The couple has signed forms permitting their children, and all the caregivers involved, to use the module. The option of admitting one or both of the older persons to a nursing home is discussed; however, because it is not yet considered necessary, the decision is deferred. A visit by one of the GPs is planned to evaluate the situation with the couple.

Changes in care

In the 1980s, it was expected and common practice that, as the needs of an older couple or individual started presenting problems, the GP fulfilled a central role in organizing appropriate care. Most likely there would be an exchange between the GP, the older person(s) and their children and/or their neighbors, after which decisions would be made as to how best to solve the problems. Solutions could consist of practical actions, like arranging a lift with someone from the social club, cooking on electricity instead of gas, or regular visits to the grocery store with a volunteer, and having some shopping delivered at home. Financial actions might also be necessary, such as asking a local civil servant to help fill in forms and tax returns, or requesting a contribution from the church funds towards taxi costs. Medical actions could include starting or stopping therapies, possibly involving other (usually local) (para)medical professionals. Over time, the conclusion might be reached that procedures should be set in motion to obtain a place in the local residential care home. This was not a 'doom scenario' since it was often the location for many social activities, and both residents and staff knew each other and (some) were, literally, family. Medical caregivers, including the GP, continued seamlessly in the new setting. Satisfaction with the GP's contribution was sometimes expressed in the form of a chocolate letter at St Nicholas, or a bottle of wine at Christmas but, most often, in the form of the continuing relationship and process of tackling new questions together as they arose.

In 2018 the GP still plays a role in coordinating the medical care for older persons living in the community, but the care has become less exclusive. While the practical problems and solutions may not have changed greatly, the organization has. Many other professionals are included and the role of the informal caregivers has become formalized. The changed healthcare organization concept has been captured in the phrase 'person-centered, integrated care' and a paradigm shift has occurred from 'reacting as required' to 'proactive anticipation'. (10,11)

As an overall measure for the succes of the provided care, the concept 'value' has now become widely used. This combines the achieved outcomes of care and the costs of doing so. (12) In person-centered integrated care, the new care organization term 'value' therefore also includes the personal values of patients, since these partly determine both the achieved outcomes and the costs. These personal values are more consistent and have not changed substantially over time. For older persons, particularly qualitative studies consistently show the same personal values being prioritized, albeit under various names, e.g. social relations, functional ability and activities, security and health status. (13,14,15,16) These personal values influence the perception of changes in care.

The personal values of the immediately involved caregivers are also relevant when changing care. For example, GPs still define their role by the core values of being gener-

alist, person-centered and offering continuity of care. (17, 18) The degree to which these values remain intact influences their perceptions of changes.

The changes taking place in health care are partly a reaction to changes in society and views on disease and disability. Major changes are that there are more older persons who, while having a greater number of diagnosed and treatable chronic diseases, are increasingly wealthier and better educated and expect to stay active longer. (6,7,8,19). There is also a proportionately greater number of less-fortunate older persons with functional restrictions and (complex) care needs. (4) Due to a shift from a welfare state to a participation society and the accompanying changes in laws and regulations, many of the Dutch older persons with complex care needs who were previously cared for in sheltered residential facilities (care homes) are now living more or less independently in the community. (20,21) In the community the older persons, and their professional and informal caregivers, are confronted with the challenge of putting together an appropriate package of medical, social and domestic care. In the Dutch context this has to be performed within the framework of the three separate laws governing medical care and costs (Health Care Act), social care and participation (Social Care Act) and long-term care and disability (Long-Term Care Act). (22) The actual care is partly regulated at a national and partly at a municipal level. It is delivered by organizations and autonomous professionals financed from a mix of public and private funds via the three above-mentioned laws and out-of-pocket money from citizens. Informal caregivers are increasingly relied on to fill the gaps (23). Professional care organization has become more complicated through phenomena such as free market competition, task specialization, care centralization and interdisciplinary cooperation. (9,11,24,25) Combining these changes with the necessity to find solutions for rising healthcare costs has inspired influential care concepts such as 'value-based healthcare' and 'triple aim' which, in turn, have introduced new roles and procedures for policymakers, and care users and providers. (8,12,26,27)

Innovating care

As mentioned before, care change is partly driven by changes in society and context. Therefore, a conscious effort must be made to ensure the incorporation of both the individual and collective personal values of patients. Traditionally, at the individual level, the actual care was based on the available resources and the one-to-one interaction between physician and patient. Nowadays, the actual care is still partly determined by the one-to-one interaction between the caregiver and patient as it was in the past. Increasingly, however, it is also determined by protocols and standards leading to a selection of predetermined interventions created under the influence of evidence and policy, and delivered by multiple professionals. (28,29,30) The expression of the personal values of the patient in the actual care received remains vulnerable, as it was before. (31,32) Ensuring that 'An individual's specific health needs and desired health outcomes are the

driving force behind all healthcare decisions and quality measurements' is now called 'patient-centered care'. (33,34) Patient-centeredness, formerly largely dependent on the one-to-one relation between the patient and the caregiver (GP), is now also an organizational entity in care innovation. To achieve and ensure this, we depend on instruments such as shared decision-making at the individual level, and value determination at the collective level. (32)

A still relatively underdeveloped approach is to involve patients directly in the care innovation process, usually referred to as 'patient engagement'. (35) Experience and evidence is being developed with patient engagement varying from an advisory function in an organization through participation in decision-making. (36,37) This has the potential of truly putting the patient at the center of care development and bypassing a number of problems related to collecting and interpreting patient opinions and translating them to care design. Thus, while there are changes in progress at the various levels ranging from (inter) national policy, organization and financing and professional delivery, the voice of the patient needs to be expressed and heard at all levels. A practical question is: how can patient centeredness be incorporated into care improvement and innovation with personal value?

Towards care with personal value

This thesis focuses on combining the process of innovating care practice and the values of the older persons involved, by investigating patient satisfaction while innovating and implementing integrated primary care. We propose a role for patient satisfaction of older persons in the innovation and implementation of integrated care, thereby addressing the question as to how patient satisfaction can help the innovation of strategies and processes towards 'care with personal value'.

Description of used concepts

Integrated care is of particular importance to older persons with complex health problems. Since integrated care is person/patient-centered and its design and implementation should represent personal value, patient satisfaction is a relevant instrument and outcome. Since all these concepts are interrelated, these concepts are briefly described below.

Integrated care

There is no single definition of 'Integrated Care'. In her 2016 report for The King's Fund entitled 'Supporting integration through new roles and working across boundaries', Helen Gilburt refers to the definition used in a 2008 World Health Organization directive (9,38) and this definition is still valid today. Therefore, the following working definition of integrated care is proposed: '*The management and delivery of health services so that clients*

receive a continuum of preventive and curative services, according to their needs over time and across different levels of the health system'. This directive indicates that integrated care can mean different things to different people. For example: i) to the user, it can mean that the care is seamless, smooth and easy to navigate; ii) to providers it implies that separate services are provided, managed, financed and evaluated in relation to each other; iii) for professionals, it means that different (health) professions or disciplines/ specialties work together to provide joined-up services; and iv) at the management and policy level, it can mean that decisions on policies, financing, regulation and/or delivery are appropriately compartmentalized.

This definition (as well as its practical interpretations) emphasizes that integration of care must be based on the needs of the users. Perhaps the best expression of the 'patient-centeredness' of integrated care is offered by the title of the UK National Health Service consultation document (2012) on this subject: '*No decision about me without me*'. (39) Moreover, in his book on integrated care, Schrijvers goes further by adding to the WHO definition the following phrase '*...according to their needs, throughout their whole life and in continuous discussion with the patients*'. (10)

In their conceptual framework for integrative primary care Valentijn and colleagues show the full range of elements of horizontal and vertical integration around the person-centered focus. (11) The horizontal ranges from functional to normative while the vertical ranges from clinical to system.

Both the WHO definition and the framework of Valentijn and colleagues accentuate that the obligatory focus on the user/person optimally integrated care, involves many levels and expressions and its development can therefore follow various routes.

Patient satisfaction

Patient satisfaction is defined as an evaluation by the patient based on the fulfilment of expectations. (40,41) Satisfaction with the GP can be determined by asking the question 'How satisfied are you with your GP?' The responses can be quantified by requesting a score on a scale ranging from 0 to 10, or using a 5-point (Likert) scale ranging from very satisfied to very dissatisfied (with three intermediate choices).

The concept 'patient satisfaction' can be further understood by its historical development. In 1983 Gregory C. Pascoe wrote a review based on the literature on patient satisfaction in primary health entitled 'Evaluation and Program Planning'. He concluded that, although relevant as a predictor and indicator of care outcomes, additional (especially longitudinal) research was required. (42) In particular, the small effect sizes in the measurements of satisfaction were reported to be a problem.

In 1997, John Sitzia and Neil Wood published a review in Social Science & Medicine on patient satisfaction entitled 'Patient satisfaction: a review of issues and concepts'. They concluded that, possibly due to pressure from the rising consumerism in Western medi-

cal practice, more attention was paid to the measurement of satisfaction in management and professional terms as an audit tool, than to understanding the underlying meaning. (43) The authors suggested that more attention should be paid to dissatisfaction and a narrative approach should be applied to care expectations, and warned healthcare providers about a too optimistic interpretation of satisfaction responses.

Patient satisfaction with health care has an impact on patient outcomes, including treatment adherence and health behavior. (44-46) It is also argued that only patients themselves can evaluate the entire (especially chronic) care process and determine whether (or not) it provides worthwhile outcomes. (47) However, because patient satisfaction offers only a partial picture of care organization, it is not sufficient to use this as a design indicator and evaluator of care improvement. For example, patient satisfaction does not reflect the technical quality of care, but is strongly associated with the ratings of communication. (48) Moreover, the personal characteristics of patients and care providers (such as age and gender) also influence patient satisfaction. (49, 50)

A study published in 2010 in the British Medical Journal showed that 4.6% of the variance in the satisfaction rating of patients of their GPs was related to differences in the GP practices. (51) This prompted the discussion in the editorial section under the heading: 'Are measures of patient satisfaction hopelessly flawed?' The general conclusion was that this is not the case, but that the measures do need to be refined. (52)

Implementation

Implementation research is the study of methods to promote the systematic uptake of proven clinical treatments, practices, and organizational and management interventions into routine practice and, thereby, improve health (see homepage implementation science url: https://implementationscience.biomedcentral.com/).

Despite broad agreement on the evidence for the 'health improvement' effect of an intervention, in practice the required changes are not always made. This phenomenon has been described and solutions have been suggested in 'Crossing the quality Chasm' by Plsek. (53) Implementation can be seen as the combination of strategies and interventions aimed at bridging this chasm.

Confusion about the terminology is often present in implementation literature, because the same term might be used for various concepts (homonyms), and differing terms might be used to describe the same concept (synonyms). In this thesis, all the terms used are in accordance with the rationale that care innovation entails designing new care and promoting its uptake and dissemination in daily practice through a combination of interventions and strategies. Care innovation can consist of redesigning and adapting existing care, and the combined process of promoting uptake and dissemination can be called implementation. However, in practice, innovation and implementation are so closely related that they cannot be easily differentiated.

Complex health problems

An individual can have multiple health problems and this situation is more likely to occur in older persons. These problems can be categorized according to their consequences in the four domains of i) somatic, ii) functional, iii) psychological and iv) social functioning. Complex health problems can be defined as the accumulation and interaction of problems in multiple domains. In a research setting, as developed in the ISCOPE study, an individual is considered to have 'complex health problems' when he/she reports (or is found to have) problems in two or more of the four domains. In case of an increasing number of domains, an interaction of problems has a more than linear association with poor health and wellbeing outcomes, including increased use of care, and death. (54)

Aim and outline of this thesis

The overall aim of this thesis is to provide an evidence-based proposal for the incorporation of the opinions and values of older persons in the innovation of their GP care, by investigating patient satisfaction as an influencing factor in the innovation and implementation of integrated care.

The background projects

This thesis is based on two large research projects (for one of which the author was project leader), performed within the department of Public Health and Primary Care. Both projects took place in and around the city of Leiden between 2009 and 2013 as part of the National Program for Elderly Care.

The ISCOPE study

The overall aim of the Integrated Systematic Care for Older PErsons (ISCOPE) study was to assess, in general practice, the efficacy of a simple monitoring system for determination of the individual level of complexity of health problems and the composition and performance of a personalized care plan, as an operationalization of integrated care. In this project (led by J.W. Blom), a postal screening questionnaire, aimed at finding perceived problems in four domains (somatic, functional, psychological and social functioning) was sent to all persons aged 75 years and older in 59 primary care practices. (55) In 30 random intervention practices, the GPs and their practice nurses were trained in providing person-centered integrated care. This entailed making and performing an individual integrated care plan for a randomized selection of patients with perceived health problems in 3 or 4 of the four domains. In the control practices, patients received 'care as usual'. Participants in the intervention and control practices were visited by a research nurse at baseline, and again one year later, to collect demographic and clinical data as well as information on how they experienced the care.

The MOVIT project

The *Medischezorg Optimalisatie in Verzorgingshuizen Implementatie Traject* (MOVIT) project (Medical Care Optimalization in Care Homes Implementation project) was initiated in the region South Holland-north with the aim of developing a strategy for the implementation of improved integrated care for older persons throughout the entire region. In this project (led by A.J. Poot), a total of 29 local teams of GPs, nursing staff, pharmacists and elderly care physicians were formed, serving 33 of the 43 regional residential care homes. To improve care, these teams were individually coached and offered regional training in moving towards optimal person-centered integrated care for their residents. They prioritized and made improvements in inter-professional cooperation in the daily delivery of integrated care. The implementation process was described and all residents of the participating care homes were visited by a research nurse at the beginning and after (at least) one year of implementation to collect demographic, clinical, and care experience data.

Overview of this thesis

In this thesis, the first four studies contribute to the overall aim by providing evidence on patient characteristics and values, and patient satisfaction; the fifth study contributes by describing the position patient satisfaction can have within the real-life implementation of integrated care for older persons in the community.

Chapter 2 presents an investigation of the relationship between satisfaction and patient characteristics in the ISCOPE study; this study focuses on the association between the complexity of health problems and satisfaction. The aim is to better understand the seemingly contradictory finding that emerged from earlier studies, i.e. that increasing age is related to higher satisfaction while the age-related increase in morbidity is related to lower satisfaction.

Chapter 3 further explores the relation between the complexity of health problems and patient satisfaction, by examining changes in satisfaction levels during the implementation of integrated care in the ISCOPE study in relation to the perceived health state of the older persons.

Chapter 4 investigates the role that the doctor-patient relationship, as perceived by the older persons, plays in their level of satisfaction with the GP in the MOVIT study.

Chapter 5 examines the changes in perceptions of aspects of integrated care among older persons and GPs during the implementation of integrated care in the MOVIT project. Investigating these differences in parallel serves to highlight the differences in values.

Chapter 6 describes how, retrospectively, using descriptive frameworks a matrix was developed to capture the complex process of the pragmatic real-life implementation of

the MOVIT project. On reflection, implementation of MOVIT reveals the role that patient satisfaction could have played in this process.

Chapter 7 discusses the evidence provided by the studies in the previous chapters concerning the role of patient satisfaction. The evidence that emerged is placed in the context of the available literature. After reflecting on the experiences gained by performing the MOVIT and ISCOPE projects, a proposal is formulated as to how patient satisfaction can be used in the implementation of integrated care. Finally, a brief description is given of the studies and activities that are planned as a continuation of the work presented in this thesis.

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Chapter 2

Level of satisfaction of older persons with their general practitioner and practice: role of complexity of health problems.

Antonius J Poot[1], Wendy PJ den Elzen[1], Jeanet W Blom[1], Jacobijn Gussekloo[1].

[1]Department of Public Health and Primary Care, Leiden University Medical Center, Leiden, the Netherlands

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ABSTRACT

Background

Satisfaction is widely used to evaluate and direct delivery of medical care; a complicated relationship exists between patient satisfaction, morbidity and age. This study investigates the relationships between complexity of health problems and level of patient satisfaction of older persons with their general practitioner (GP) and practice.

Methods and findings

This study is embedded in the ISCOPE (Integrated Systematic Care for Older Persons) study. Enlisted patients aged ≥ 75 years from 59 practices received a written questionnaire to screen for complex health problems (somatic, functional, psychological and social). For 2664 randomly chosen respondents (median age 82 years; 68% female) information was collected on level of satisfaction (satisfied, neutral, dissatisfied) with their GP and general practice, and demographic and clinical characteristics including complexity of health problems. Of all participants, 4% was dissatisfied with their GP care, 59% neutral and 37% satisfied. Between these three categories no differences were observed in age, gender, country of birth or education level. The percentage of participants dissatisfied with their GP care increased from 0.4 % in those with 0 problem domains to 8% in those with 4 domains, i.e. having complex health problems ($p < 0.001$). Per additional health domain with problems, the risk of being dissatisfied increased 1.7 times (95% CI 1.4-2.14; $p<0.001$). This was independent of age, gender, and demographic and clinical parameters (adjusted OR 1.4, 95% CI 1.1-1.8; $p=0.021$).

Conclusion

In older persons, dissatisfaction with general practice is strongly correlated with rising complexity of health problems, independent of age, demographic and clinical parameters. It remains unclear whether complexity of health problems is a patient characteristic influencing the perception of care, or whether the care is unable to handle the demands of these patients. Prospective studies are needed to investigate the causal associations between care organization, patient characteristics, indicators of quality, and patient perceptions.

Netherlands Trial Registration number 1946.

INTRODUCTION

Patient satisfaction, also referred to as global rating of health care, has an important but ambiguous role in patient-centered care[1]. Satisfaction is related to quality of service but not directly with quality of care [2]. Satisfaction has however been directly linked to health care outcomes such as use of facilities, expenditure and even mortality[3]. Despite these ambiguities, satisfaction is often used in evaluating and directing the delivery of health care[1–7]. The importance attributed to satisfaction, its clinical relevance and the ambiguities in its interpretation and use [8] make the understanding of the determinants of patient satisfaction very relevant to patients, managers and clinicians.

Research into patient satisfaction, amongst older persons, has yielded conflicting findings concerning the roles of age and morbidity as determinants. Overall, older age is found to be related to higher satisfaction[9,10] and an increase in morbidity and ailments related to lower satisfaction[2,3,11]. Since increasing age is related to a higher prevalence of morbidity and ailments, the relation between satisfaction, age and morbidity remains unclear.

This study investigates the relation between satisfaction and patient characteristics in a large population of older persons in primary care. We hypothesized that the sum of somatic, functional, psychological and social problems, expressed as the complexity of health problems, is a powerful determinant of the self-reported level of satisfaction irrespective of age and the individual elements of morbidity. We therefore examined the associations between complexity of health problems, age and individual components of morbidity with satisfaction in older persons in primary care. A strong influence of the complexity of health problems would help to understand the seemingly contradictory finding that increasing age is related to higher satisfaction while the age related increase in morbidity is related to lower satisfaction.

METHODS

Study population

The current study is embedded in the ISCOPE study (Integrated Systematic Care for Older Persons) in which data on demographic and clinical characteristics of primary care patients aged ≥ 75 years living in the community and in care homes were obtained.

The overall aim of this study was to assess the efficacy of a simple structural monitoring system to detect deterioration in functional, somatic, mental or social health of individuals aged 75 years and over, followed by the execution of a care plan for those people with a combination of somatic, functional, mental and social problems.

The study population was recruited from 59 participating primary care practices (560 practices were invited). All registered persons aged ≥ 75 years were targeted (n=12066). After excluding 590 persons whom were deceased, too ill, non-Dutch speaking, admitted to a nursing home, or not considered suitable by their general practitioner (GP), 11476 persons were sent a written screening questionnaire (Appendix S1). Non-responders were reminded by telephone and if necessary were assisted by research nurses to fill in the screening questionnaires. A total of 7285 screening questionnaires were completed.

Of the older persons returning the screening questionnaire, a random sample was visited at home to obtain data on social and demographic characteristics, and to administer additional questionnaires. Based on the outcomes of the screening questionnaire, all respondents scoring positive in 3 or more domains were approached for an interview. Of those reporting no problems and those scoring problems on 1 domain, a random sample of 15% was interviewed. Of those scoring in 2 domains, a random sample of 60% was interviewed. A total of 2713 interviews was performed at home by trained research assistants and consisted of questions concerning demographics, health and illness and validated questionnaires exploring perceived health, functional limitations, depression, cognition, loneliness, quality of life, healthcare use and satisfaction.

For the present study, 2664 participants with complete data on the question about patient satisfaction were included in the analyses. All participants in the interviews gave written informed consent. The Medical Ethics Committee of the Leiden University Medical Centre approved the study. The study was registered in the Netherlands Trial Register (Registration number 1946).

Study parameters

Satisfaction

The interview included questions about the level of satisfaction the respondent felt with their various care providers including, specifically, the GP practice. In the present study satisfaction was scored on a 5-point Likert scale with the choice options 'being very satisfied', 'satisfied', 'neutral', 'dissatisfied' and 'very dissatisfied'.

Previous research has indicated that, for patients, the choices 'very satisfied' and 'satisfied' are very different: i.e. 'very satisfied' is considered a clear cut above the expected whereas 'satisfied' is associated with average care, i.e. more or less adequate. [12] 'Dissatisfied' and 'very dissatisfied' are regarded as a negative choice. Therefore, we regrouped the five answers to the satisfaction questions into three categories, i.e. Satisfied (= very satisfied), Neutral (= satisfied and neutral) and Dissatisfied (= dissatisfied and very dissatisfied). For the purpose of the logistic regression analysis, satisfaction was also dichotomized into two groups, i.e. Satisfied (including very satisfied, satisfied and neutral), and Dissatisfied (including dissatisfied and very dissatisfied).

Complexity of health problems

The term complexity is used widely in medical literature, amongst others in the context of complexity science[13]. In this study, complexity of health problems is seen as a characteristic of an individual patient, describing his or her health- and care situation. We operationalized complexity of health problems as the number of domains (somatic, functional, psychological, social), in the ISCOPE screening questionnaire, with two or more positive answers (Appendix S1).

Each domain included 4-9 questions, derived from existing validated questionnaires[14–16].

The respondents were categorized into five groups, ranging from problems in 0 domains to problems in 4 domains.

Sociodemographic characteristics

Data on sociodemographic characteristics age, gender, country of birth, level of education and living situation were obtained. Education level was categorized based on the highest completed level of education. Living situation was registered as being either in the community or a residential home.

Functional status

Functional status was measured with the Groningen Activities Restriction Scale (GARS) [14], which provides an overall score for limitations in the activities of daily living (ADL). The questionnaire consists of 18 questions. Questions were phrased as: 'Can you fully independently,…?', answers range from 'Without any difficulty' (1 point) to 'Not fully independently with someone's help' (4 points). The overall score ranges from 18-72 with a higher score indicating more severe restrictions.

Health and illness

Self-perceived health was scored using a visual analogue scale (VAS) with 0 as the lowest possible level and 100 as the best imaginable level. Self-reported diseases and ailments were obtained during the interview which were grouped within the following 19 chronic diseases: diabetes, heart failure, malignancy, chronic obstructive pulmonary disease, incontinence, arthritis, osteoporosis, dizziness, lower urinary tract symptoms, depression, anxiety, dementia, vision, deafness, fracture, stroke/transient ischemic attack and myocardial infarction.

Psychological

The Mini Mental State Examination (MMSE) provides a measure for cognitive impairment and ranges from 0 (very impaired) to 30 (not impaired) [17].

The Geriatric Depression Scale 15 items (GDS-15) provides a measure for the presence of depressive symptoms, specifically for the elderly, ranging from 0 to 15 (not depressed to depressed) [18]. The GDS-15 was obtained only from participants who had an MMSE score ≥ 18 points.

Social

The Loneliness Scale of De Jong Gierveld (DJG) provides a score for loneliness encompassing both emotional and social loneliness, on an 11-item scale, with higher scores indicating more severe loneliness.[16] This loneliness scale was restricted to people with an MMSE score ≥ 19.

Quality of life was measured with the Dutch EQ5D scale and is expressed as a number, with a maximum of 1.0 indicating optimal quality. Cantril's ladder is a VAS, ranging from 0 to 10, in which the respondent indicates his/her perceived quality of life at this moment (10 being the best imaginable).

STATISTICAL ANALYSIS

Categorical variables were expressed in percentages. Differences between groups in categorical variables were analyzed using Pearson's Chi-square test. Continuous variables were expressed as median and interquartile range. Differences between groups in continuous variables were analyzed with the Kruskal-Wallis test.

The association between complexity and satisfaction was investigated with logistic regression models. We constructed three subsequent regression models. In the first model, crude odds ratios (OR) for the relation between complexity and satisfaction were estimated. The second model was an extension of the first by adjusting for age. The third model included additional adjustments for gender, living situation, disability in daily living (GARS score), number of diseases, cognitive function (MMSE score), subjective health (VAS), quality of life (EQ5D, Cantril score), depressive symptoms (GDS-15 score) and loneliness (DJG). For stability of the logistic regression models, GDS-15 [low (≥ 4) and high (≥ 5)] [19] and DJG were dichotomized [low (≤ 3) and high (≥ 3)].

Analyses were conducted with IBM SPSS version 20.

RESULTS

The study population had a median age of 82 (IQR 79-87) years and was predominantly female (68%), of Dutch ethnicity (91%), community dwelling (89%) and had an education level higher than primary school (34% primary school only).

Most participants were satisfied with their GP practice; (very satisfied 37.3%, satisfied 49.9%, neutral 8.7%, dissatisfied 3.4%, very dissatisfied 0.7%). This predominance of satisfaction was also present when the level of satisfaction was divided into the three categories (satisfied 37.3%, neutral 58.6%, dissatisfied 4.1%).

No age differences were found between the three satisfaction categories. The median age for participants in the satisfied group was 82 (IQR 79-87) years, compared with 83 (IQR 79-87) years in the neutral group and 83 (IQR 79-88) years in the dissatisfied group (Kruskal-Wallis; p=0.140)

Between the three satisfaction categories, no differences were observed in gender (p=0.271), country of birth (p=0.353) or education level (p=0.248). Significant differences were found for living situation; the percentage living in a residential home was significantly higher in the dissatisfied group (p=0.003) than in the neutral and satisfied group (19% vs 11% vs 9%; p for trend=0.003). No other associations between demographic characteristics and satisfaction were found. Satisfaction correlated with all of the clinical characteristics; a lower satisfaction level was associated with poorer performance on all test characteristics and with a greater number of diseases.

The level of satisfaction was inversely associated with the complexity of health problems (Table 1) (p <0.001). Satisfaction was similar between participants with 0 and 4 problem domains (i.e. 11% and 15%, respectively) whereas dissatisfaction showed considerable variation (1% and 34%, respectively). Figure 1 shows the association between the percentage of dissatisfied participants and the number of problem domains for the groups aged ≤ and ≥ 85 years. In both age groups there was increased dissatisfaction with an increasing number of problem domains.

Table 2 shows the crude and adjusted ORs of being dissatisfied with the care provided by the GP practice, related to the complexity of health problems. The risk of being dissatisfied increased with an increasing number of complex health problems. Compared

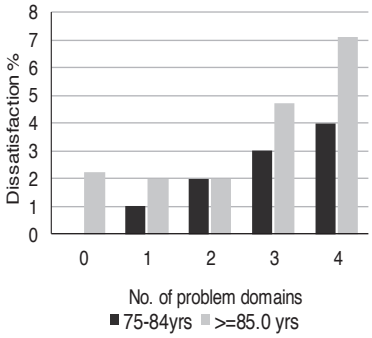

Figure 1. Dissatisfaction in relation to the number of problem domains and age.

Table 1. Demographic and clinical characteristics related to level of satisfaction of older persons with the general practice.

			Level of satisfaction			
		Total population	Satisfied	Neutral	Dissatisfied	p-value
		n=2664	n=994	n=1561	n=109	
			(37.3%)	(58.6%)	(4.1%)	
Sociodemographic characteristics						
Age	Years	82 (79-87)	82(79-87)	83(79-87)	83(79-88)	0.140
Gender	Female	1819 (68%)	66%	69%	69%	0.271
Place of birth	Netherlands	2427 (91%)	90%	92%	89%	0.353
Education level	Primary only	962 (36%)	34%	37%	40%	0.248
Living situation	Community	2381 (89%)	91%	89%	81%	0.003
Functional and clinical characteristics						
Activities of daily living	GARS (points)	32 (24-41)	30 (24-39)	32 (24-42)	38 (31-46)	<0.001
Number of diseases	Sum max. 19	4 (3-6)	4 (3-6)	4 (3-6)	5 (3-6)	0.005
Subjective health	VAS	70 (55-75)	70 (55-75)	70 (55-75)	60 (50-70)	<0.001
Depression	GDS	2 (0-4)	1 (0-3)	2 (0-4)	3 (1-6)	<0.001
Cognitive function	MMSE	28 (26-29)	28 (26-29)	28 (26-29)	27 (25-29)	<0.001
Loneliness	DJG	2 (0-5)	2 (0-4)	3 (1-5)	4 (2-7)	<0.001
Quality of life	EQ5D Dutch tariff	0.8 (0.5-0.8)	0.8 (0.6-0.8)	0.8 (0.6-0.8)	0.5 (0.2-0.7)	<0.001
	Cantril's ladder	7 (7-8)	6 (7-8)	7 (7-8)	7 (6-8)	<0.001
Complexity of health problems						
0 problem domains		243 (9%)	11%	9%	1%	<0.001
1 problem domain		212 (8%)	9%	8%	4%	
2 problem domains		726 (27%)	29%	27%	21%	
3 problem domains		1013 (38%)	37%	39%	40%	
4 problem domains		461 (17%)	15%	18%	34%	

Categorical data are represented as n (%). Differences were tested with Chi-square tests. Numerical data are presented as median (IQR). Differences were tested with Kruskal-Wallis tests.

Table 2. Risk of older persons to be dissatisfied with GP care related to complexity of health problems, with adjustment for age.

	Crude			Adjusted for age		
Number of domains	OR	95% CI	p-value	OR	CI	p-value
0	1			1		
1	4.6	0.5-42	0.171	4.6	0.5-42	0.171
2	7.9	1.1-59	0.043	7.9	1.1-59	0.040
3	11	1.5-80	0.018	11	1.5-80	0.018
4	21	2.9-154	0.003	21	2.8-154	0.003
Per domain increase	1.7	1.4-2.2	<0.001	1.7	1.4-2.2	<0.001

to those without problems, this risk of being dissatisfied increased from 4.6 (95% CI 0.5-42) for participants with 1 problem to 21 (95% CI 2.9-155) for participants with health problems on 4 domains. Per additional problem domain, the risk of dissatisfaction increased 1.7 times (OR 1.7 95% CI 1.4-2.2; Ptrend <0.001). This association remained similar when adjusted for age (1.7 95% CI 1.4-2.2; Ptrend <0.001). When adjusted for age, gender, living situation, disability in daily living (GARS score), number of diseases, MMSE, VAS, EQ5NL, Cantril, GDS-15 and DJG the association remained present (OR 1.4, 95% CI 1.1-1.8; Ptrend = 0.021).

DISCUSSION

In the present study on older persons in primary care, the level of patient satisfaction was not associated with age or other demographic characteristics. However, the complexity of health problems of older persons was associated with lower satisfaction, independent of age, gender, living situation, functional status, number of diseases, cognitive impairment, self-perceived health, quality of life, depression and/or loneliness .

When exploring the association between the number of problem domains and the level of satisfaction, the expressed 'dissatisfaction' showed more variation compared with 'satisfaction'. Interestingly, there was a higher frequency of satisfaction in the group with 0 problem domains. This frequency decreased and gradually transformed into a predominance of dissatisfaction in the group with 4 or more problem domains. This suggests that the positive relation between increasing age and satisfaction reported by others [9,10] may only hold true for groups with a low complexity of health problems. This association is no longer present with a higher complexity load. These findings may indicate that a heavier load of care complexity leads to a lower level of satisfaction with GP care and that this relation is primarily related to the complexity load and not to age, demographics or one of the individual aspects of morbidity. This confirms our initial hypothesis that the complexity of health problems is more strongly associated with the level of satisfaction than age and/or demographic and clinical parameters.

As patient satisfaction is used as an outcome in care evaluation and is a goal of care organisation in itself, understanding its meaning is relevant. Our findings make the following contributions. First, when investigating the relation between individual patient characteristics and satisfaction, the complexity of health problems of the elderly persons must be taken into account. Having shown that the complexity is a stronger determinant than the individual characteristics, the mean complexity level of the population from which the sample is drawn could distort conclusions attributed to individual characteristics. Second, where the complexity load is greatest and therefore the demands on the health system are largest, this negative influence on the level of satisfaction by older

users is strongest. This effect should be taken into account when using satisfaction in evaluating care organization and delivery. Third, we found dissatisfaction to be a relatively infrequent but meaningful indication of the level of satisfaction as demonstrated by the high odds ratios in table 2, the confidence intervals for the groups with 3 and 4 complexity domains, although wide, having lower limits well above 1.

Our study shows that a relatively large population is necessary to study satisfaction and draw conclusions with statistical significance. This is due to the inherently high levels of satisfaction allowing limited room for change and expressions of dissatisfaction. We think therefore that, although the statistical power is a challenge for researchers, in the daily situation, practitioners and managers should pay attention to changes in expressions of satisfaction and particularly dissatisfaction in older patients.

A strength of the present study is the large population of older people in primary care, recruited from a range of GP practices, providing a representative group of older persons in primary care regarding age, morbidity and complexity of health problems. In contrast to other studies, high levels of morbidity and the presence of complex health problems were not a reason for exclusion in our study. This enabled us to examine the relation between satisfaction with GP practice, age and complexity of health problems in a representative sample of older persons in primary care. Since the number of persons that indicated being dissatisfied with the provided care was relatively small, we were unable to perform in-depth analyses in smaller subgroups.

In conclusion, among these older persons, satisfaction with the GP practice does not increase with age. However, dissatisfaction with the GP practice is strongly correlated with higher levels of complexity of health problems, independent of age and/or demographic and clinical parameters. It remains unclear whether the complexity of health problems is a patient characteristic influencing the perception of the offered care, or whether the primary care offered is unable to handle the demands of patients with complex healthcare problems, resulting in a lower level of satisfaction.

Further unravelling of the relation between satisfaction, complexity of health problems and the individual constituents of morbidity, such as depression and loneliness, is necessary. Also prospective studies are needed to investigate the causal associations between care organization and delivery, patient characteristics, indicators of quality, and patient perceptions.

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APPENDIX 1. ISCOPE SCREENING QUESTIONNAIRE

Daily life abilities

These first questions relate to how you function/manage day to day life
You may be helped in these activities by aids such as a stick walking frame or wheelchair.

1. Can you, without help from anyone else, do the shopping?
   Yes (0 pts.)/ No (1 pts.)

2. Can you, without help from anyone else, walk outdoors?
   Yes (0 pts.)/ No (1 pts.)

3. Can you, without help from anyone else, dress and undress yourself?
   Yes (0 pts.)/ No (1 pts.)

4. Can you, without help from anyone else, go to the toilet?
   Yes (0 pts.)/ No (1 pts.)

5. Can you manage your finances yourself (collect your money, pay your bills)?
   Yes (0 pts.)/ No (1 pts.)

6. How well would you say you cope with your general day to day life?
   Well (0 pts.)/So-so (1 pts.)/Not at all well (1 pts.)

Health and illness

7. Which mark would you give your physical fitness?
   1-6 (1 pts.)/ Not at all fit *7-10 (0 pts.) Very fit*

8. Do you experience day to day problems due to poor eyesight (even if you wear glasses or contact lenses)?
   Yes (1 pts.) / No (0 pts.)

9. Do you experience day to day problems due to poor hearing (even if you wear a hearing aid)?
   Yes (1 pts.) / No (0 pts.)

10. Have you lost weight (more than 6kgs) in the last 6 months unintentionally?
    Yes (1 pts.) / No (0 pts.)

11. Are you using more than 4 different kinds of medicine at the moment?
Yes (1 pts.) / No (0 pts.)

12. Have you had a fall in the last month?
Yes (1 pts.) / No (0 pts.)

13. Have you been admitted to the hospital in the last 6 months?
Yes (1 pts.) / No (0 pts.)

Psychological functioning

14. Do you feel you have memory complaints?
Yes (1 pts.)/Sometimes (1 pts.)/ No (0 pts.)

15. Have you recently felt sad or depressed?
Yes (1 pts.)/Sometimes (1 pts.)/ No (0 pts.)

16. Have you recently felt nervous or anxious?
Yes (1 pts.)/Sometimes (1 pts.)/ No (0 pts.)

17. Do you feel pretty worthless at the moment?
Yes (1 pts.)/Sometimes (1 pts.)/ No (0 pts.)

Social functioning

18. Do you feel that your life is empty?
Yes (1 pts.)/Sometimes (1 pts.)/ No (0 pts.)

19. Do you feel the lack of a close friend?
Yes (1 pts.)/Sometimes (1 pts.)/ No (0 pts.)

20. Do you feel left alone sometimes?
Yes (1 pts.)/Sometimes (1 pts.)/ No (0 pts.)

21. Do you feel there are enough people with whom you feel a close connection?
Yes (1 pts.)/Sometimes (1 pts.)/ No (0 pts.)

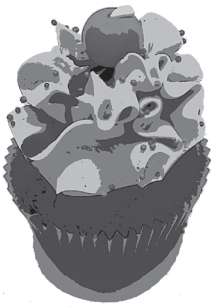
Chapter 3

Changes in patient satisfaction related to their perceived health state during implementation of improved integrated care for older persons.

Antonius J. Poot[1], Daisy M. Wopereis[1], Wendy P.J. den Elzen[1], Jacobijn Gussekloo[1], Jeanet W. Blom[1].

[1] Department of Public Health and Primary Care, Leiden University Medical Center, Leiden, The Netherlands.

Submitted



ABSTRACT

Background

Patient satisfaction with the general practitioner (GP) is lower in older persons with a higher level of complexity of health problems. This study investigates whether, in these older persons, changes in satisfaction with their GP, on receiving improved integrated care, is related to their perceived health state.

Methods and Findings

Using the Integrated Systematic Care for Older People (ISCOPE) trial (aimed at improving person- centered integrated care) this study compared changes in satisfaction with the GP in older persons (aged ≥75 years) with a high level of complex health problems on receiving integrated care, stratified for perceived health state at baseline. Satisfaction with the GP was registered on a 5-point Likert scale. Perceived health state was estimated with the Older Persons and Informal Caregivers Survey-Composite End Point (TOPICS-CEP) at baseline, stratified into 33% percentiles. Differences in satisfaction change between the intervention and usual care/control groups (overall and stratified for perceived health state) are presented by percentages of 'very satisfied' participants and improving or deteriorating 1 or more points on the Likert scale.

At baseline, the intervention (n=151) and control group (n=603) were mainly female (75%) and living alone (62%); mean age was 83 years. Medical status, perceived health state and characteristics of participants were similar. Overall, satisfaction changes showed no significant difference between the intervention and control group during implementation (difference in % 'very satisfied' -4.5%, p=0.20); after stratification for TOPICS-CEP the results were the same.

Conclusion

In older persons with a high level of complexity of health problems, implementation of person- centered integrated healthcare did not influence their satisfaction with the GP, also not among those with the highest or lowest perceived health state.

INTRODUCTION

Integrated and patient-centered care can be defined as: the organization and management of health services so that people get the care they need, when they need it, in ways that are user-friendly, achieve the desired results, and provide value for money. (19) This type of care is considered necessary and advantageous for patients with complex care needs.(2, 4, 10, 36) This applies particularly to older patients because of the higher level of complexity of their care needs, and their increasing absolute numbers and proportion in the general population.(19) Despite that the evidence concerning the (cost) effectiveness of integrated and person-centered care interventions remains unclear, there is strong consensus about the need for implementation amongst care providers and policymakers. (9, 20, 26)

In its 2006 policy paper on Integrated Care, the World Health Organization observed that the various stakeholders have different expectations of integrated care. In particular, patients expect integrated care to be seamless, smooth and easy to navigate. (19) Patient satisfaction is a complicated concept which partly reflects the realisation of these expectations. (21, 23, 37). In addition, satisfaction is influenced by patient characteristics such as age and gender, and also reflects communicative provider skills more than care characteristics or quality. (31, 38, 39)

Despite reservations concerning the meaning of patient satisfaction, it is argued that only the patient can determine whether his/her needs and expectations have been met. (20, 27) Therefore, no doubt exists about the relevance of perceptions and satisfaction of patients for the design and delivery of integrated care. (1, 9, 40, 41)

Our earlier study showed that, in older persons, patient *dis*satisfaction with general practitioner (GP) care increased with the complexity of health problems independently of age, gender and morbidity. (39) This raised the question whether the decreased satisfaction level was related more to the experienced health state of the patients themselves, or to the failure of the integration and patient-centeredness of the provided care to meet the expectations of this category of patients.

This study aims to address this question by investigating changes in the satisfaction of older patients during implementation of integrated and person-centered care in relation to their perceived health state. For this, we compared changes in general satisfaction with GP care between two groups of patients aged ≥ 75 years with a high level of complexity of care needs at baseline and at 12-month follow-up. One group received improved integrated and patient-centered care and another group received usual care. The analyses were stratified according to the perceived health state of the patients.

METHODS

Study design and participants

This study is embedded in the Integrated Systematic Care for Older People (ISCOPE) study. The Medical Ethical Committee of the Leiden University Medical Center approved the study. The study was registered in the Netherlands Trial Register (NTR1946).

The ISCOPE study is a cluster randomized trial in which all persons aged ≥75 years in 59 general practices received a structured postal questionnaire with 21 questions on four health domains (functional, somatic, mental, social). (35) The 59 practices were randomized into 30 intervention and 29 control practices. In each of the intervention practices 10 patients with health problems in 3 or 4 domains were randomly selected in order to make a care plan.

For the present study, the intervention group included all respondents to the postal questionnaire with health problems in 3 and 4 domains who: i) received a care plan, ii) answered the satisfaction questions, and iii) for whom a perceived health state score could be calculated. The usual care (control) group included respondents to the postal questionnaire with health problems in 3 and 4 domains who: i) received usual care in a control practice, ii) answered the satisfaction questions, and iii) for whom a perceived health state score could be calculated (Fig. 1).

Intervention

In the intervention practices, the GPs and practice nurses received training in making and performing a person-centered and integrated care plan for patients with complex problems. This 8-h training included: i) accessing and using resources, and ii) organizing person-centered, proactive, multidisciplinary care for older persons in primary care. In the intervention practices the GP or practice nurse made a care plan for a maximum of 10 randomly chosen patients with problems in 3 or 4 domains (Fig. 1).

The care plan process was started by the GP or practice nurse making an inventory of the problems experienced by the older person in the somatic, activities of daily living (ADL), as well as in social, psychological and communicative areas. The wishes and expectations of the older person about goals to be achieved were explored in a dialogue with the participant and their informal caregiver(s). Actions, evaluation items and moments were formulated based on this dialogue. Other care professionals were involved when suggested by the care plan. During the intervention, the GPs had the possibility to consult another GP with special post-graduate training in geriatric care in general practice. Patients in the intervention practices who received a care plan were compared with patients with similar complexity (i.e. problems in 3 or 4 domains) who received usual care in the control practices.

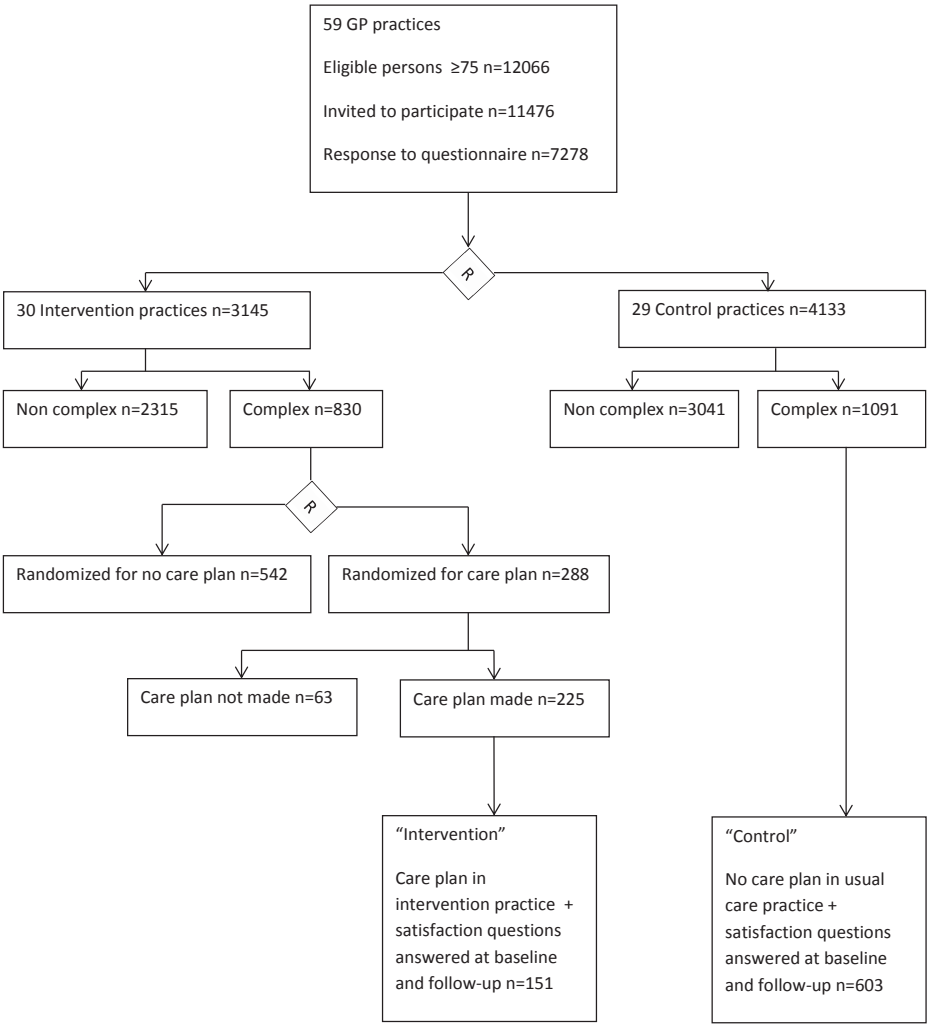


Figure 1. Flow chart

Outcomes and follow-up

At baseline and at 1-year follow-up, participants were visited by a research nurse to measure characteristics and outcomes. These included demographics, healthcare utilization, morbidities, functional limitations, emotional wellbeing, pain experience, cognitive problems, social functioning, self-perceived health, self-perceived quality of life (QOL), and satisfaction with their care providers.

Satisfaction with GP care was measured by asking: '*How satisfied or dissatisfied are you about your GP practice*?' Responses were recorded on a 5-point Likert scale ranging from 'very satisfied', 'satisfied', 'neutral', 'dissatisfied' to 'very dissatisfied'. We chose to express the aggregated satisfaction response as the percentage 'very satisfied' and the percentage rising/

decreasing at least one category rather than a mean score, since the choice 'very satisfied' is the most meaningful and there is little effect size variation in the mean Likert score. (22, 25)

Experienced health state was quantified at baseline using the TOPICS-MDS CEP. This measure was developed as a combined end point (CEP) of **T**he **O**lder **P**ersons and **I**nformal **C**aregivers **S**urvey **M**inimal **Data Set** (TOPICS-MDS) for the studies within the Dutch National Care for the Elderly Program, of which the ISCOPE study was part.(42, 43) The TOPICS-MDS CEP is an individual aggregation of the outcomes of all the used instruments indicating health and wellbeing, with a preference weight arrived at through a vignette study with a panel of older persons and informal caregivers.(44) For this, the instruments used are morbidity, functional limitations, emotional wellbeing, pain experience, cognitive functioning, self-perceived health and self-perceived QoL. It has been validated as a measure for evaluation of health state by older persons in various settings .(45) We used the TOPICS-CEP syntax to calculate the score for the individual participants in the ISCOPE intervention and control groups at baseline. The TOPICS-MDS CEP gives a score for perceived health state, ranging from 0 (worst possible perceived health state) to 10 (best possible perceived health state).

STATISTICAL ANALYSIS

To characterize and compare the intervention and control groups at baseline the following were calculated: i) median age, ii) number of diseases, and iii) percentage of participants who were female, living alone and had completed a higher education. Also, median scores for the Groningen Activities Restriction Scale (GARS) and Mini-mental State Examination (MMSE) were calculated.

We defined two outcome measures as an expression of the change in satisfaction: i.e. we calculated between baseline and follow-up: 1) the change in percentage of participants who reported being 'very satisfied', and 2) the proportion of participants who showed an increase or decrease of 1 or more points on the Likert scale. The changes in satisfaction were compared between the intervention and usual care group, stratified for TOPICS-CEP; this was performed in three strata, each representing a third of the total group (i.e. low, middle and high TOPICS-CEP).

Differences between the groups were tested with a chi-square test for dichotomous variables and with a t-test or Mann-Witney U-test for continuous variables.

Analysis of the difference in overall satisfaction scores of the intervention and usual care groups at the follow-up measurement was adjusted for age, sex and clustering by practice using generalized estimating equation (for dichotomous outcomes) and linear mixed models for continuous outcomes. Values were calculated for the intervention and usual care groups, overall and per stratum of TOPICS-CEP.

RESULTS

Sociodemographic, functional and medical characteristics, as well as perceived health state and satisfaction for the intervention and control group are presented in Table 1. Of all patients, 75% were female and 62% were living alone. Slightly more participants in the intervention group had completed a higher education (70.2% vs 61.0% p=0.05) and the intervention group was younger than the control group (82.1 vs 83.2; p=0.04). The groups showed no differences in gender, living situation, multi-morbidity, activity restriction and cognitive impairment. The perceived health state at baseline quantified by TOPICS-CEP showed no significant difference between the intervention and control group (both scoring between 6 and 7). Differences in the distribution over the five satisfaction categories were not significant (p=0.08).

Changes of satisfaction (expressed in differences of % 'very satisfied') between the intervention and control group are shown in Table 2. Overall, at baseline 44.4% of respon-

Table 1. Sociodemographic, functional, medical characteristics, perceived health state and satisfaction of the participants at baseline for the intervention and control group.

	Intervention group	Control group	P
	n= 151	n= 603	
Age in years: median (IQR)	82.1 (78.5-85.8)	83.2 (79.5-87.2)	0.04
Gender (female) n (%)	112 (74.2)	452 (75.0)	0.84
Living alone n (%)	94 (62.3)	380 (61.5)	0.94
Higher education* n (%)	106 (70.2)	368 (61.0)	0.05
Multi-morbidity** median (IQR)	4.0 (3.0-5.0)	4.0 (3.0-6.0)	0.37
Activity restriction, **GARS** score: median (IQR)	33 (27-43.3)	35 (28-43.3)	0.21
Cognitive impairment, **MMSE** score: median (IQR)	28 (26-29)	28 (26-29)	0.89
Perceived health state, **TOPICS-CEP** score, 0=poor, 10=good: mean (SD)	6.79 (1.21)	6.66 (1.12)	0.13
Satisfaction with GP practice n (%)			
Very satisfied	676 (44.4)	193 (32.0)	0.08
Satisfied	66 (43.7)	311 (51.6)	
Neutral	13 (8.6)	71 (11.4)	
Dissatisfied	4 (2.6)	25 (4.1)	
Very dissatisfied	1 (0.7)	5 (0.8)	

*Completed practical training/secondary vocational education/pre-university education/university or higher professional education.

** Number of diseases/ailments

GARS: Groningen Activities Restriction Scale minimum of 18 and maximum of 72, with higher scores indicating greater limitation

MMSE: Mini-mental State Examination, maximum of 30 indicates no cognitive impairment and a score below 24 is considered indicative of dementia.

TOPICS-CEP: **T**he **O**lder **P**ersons and **I**nformal **C**aregivers **S**urvey **C**omposite **E**nd **P**oint

dents in the intervention group were 'very satisfied' compared with 37.1% at follow-up, resulting in a difference of -7.3%. In the control group the difference was -2.8%, resulting in a difference in change of -4.5% (p-value 0.20, 95% CI -8.5;0.5). For the low, middle and high strata of TOPICS-CEP, the difference in change between the intervention and usual care group was -7.2% (p=0.16, 95% CI -14.8;0.4), -10% (p=0.99, 95% CI -19.0;-1.0) and +3.5%, respectively (p=0.24, 95% CI -1.4;8.4).

Similarly, the changes in satisfaction from baseline to follow-up between the intervention and control group are shown in Table 3; expressed as the percentage of respondents with a 1 or more point improvement or deterioration on the Likert scale. Overall, 27% of the intervention group improved 1 category or more in satisfaction vs. 25% in the control group (p=0.52); a deterioration of 1 category or more occurred in 17% vs. 20% (p=0.38), respectively. Similarly, in the low TOPICS CEP stratum, satisfaction improved in 26% in the intervention group vs. in 29% in the control group (p=0.93), and deterioration in 21% vs. in 22%, respectively (p=0.94). In the middle stratum, improvement was in 28% vs. in 23% (p=0.38), and deterioration in 13% vs. in 21% (p=0.18), respectively; and in the high stratum, improvement was in 25% vs. in 24% (p=0.96), and deterioration in 19% vs. in 18% (p=0.83), respectively.

Table 2. Changes in satisfaction about GP care over 1-year follow-up during implementation of integrated care in the intervention group compared to control (usual care) group, overall and stratified according to perceived health state (Older Persons and Informal Caregivers Survey Composite End Point; TOPICS-CEP). Respondents with Likert scale option 'very satisfied' about the GP practice.

	Intervention group n=151			Control group n=603			Difference in change between intervention and usual care	
	Baseline	Follow-up	change	Baseline	Follow-up	change	difference	p*
Overall								
Very satisfied n(%)	67 (44.4)	56 (37.1)	-7.3	193 (32.0)	176 (29.2)	-2.8	-4,5 (-8.5;0.5)#	0.20
TOPICS CEP strata								
Low 33%	16 (42.1)	13 (34.2)	-7.9	49 (25.8)	46 (24.2)	-0.7	- 7.2 (-14.8;0.4)#	0.16
Middle 33%	29 (47.5)	22 (36.1)	-11.4	74 (34.9)	71 (33.5)	-1.4	- 10.0 (-19.0;-1.0)#	0.99
High 33%	22 (42.3)	21 (40.4)	-1.9	70 (34.8)	59 (29.4)	-5.4	+ 3.5 (-1.4;8.4)#	0.24

** GEE, corrected for baseline age, gender and cluster*

 # 95% Confidence Interval

Table 3. Changes in satisfaction about GP care over 1-year follow-up during implementation of integrated care in the intervention group compared to usual care (control), depending on perceived health state (Older Persons and Informal Caregivers Survey Composite End Point; TOPICS-CEP). Respondents with satisfaction improvement, deterioration or unchanged (on the Liker scale: 1 point or more increase, decrease or unchanged).

	TOPICS CEP strata											
	Overall			Low 33%			Middle 33%			High 33%		
	Interv	Contr	p	Interv	Contr	P	Interv	Contr	p	Interv	Contr	p
	n=151	n=603		n=38	n=19		n=61	n=21		n=52	n=201	
Improvement (>= 1 category increase) n(%)	40 (27)	153 (25)	0.52	10 (26)	55 (29)	0.93	17 (28)	49 (23)	0.38	13 (25)	49 (24)	0.96
No change, n (%)	85 (56)	329 (55)	0.90	20 (53)	94 (50)	0.73	36 (59)	119 (56)	0.69	29 (56)	116 (58)	0.80
Deterioration (<=-1 category decrease) n(%)	26 (17)	121 (20)	0.38	8 (21)	41 (22)	0.94	8 (13)	44 (21)	0.18	10 (19)	36 (18)	0.83

Measured on Likert scale,
Interv = intervention
Contr = control (usual care)

DISCUSSION

In this population of older persons with a high level of complexity of health problems, the satisfaction level did not differ after implementing person-centered integrated care as compared to usual care. Also, no relation was found between the levels of perceived health state and changes in satisfaction after implementation.

Not finding a marked effect on patient satisfaction after an intervention aimed at integrating and improving person-centered care for older persons is consistent with other studies. (28, 35, 38, 46) On the other hand, a relationship has been reported before between patient and care provider characteristics, and patient satisfaction. (29, 31) Particularly the interpersonal aspects of the care provider-patient interaction were found to be significant in relation to patient satisfaction. (47-49) However, we found no studies that further investigated the relation between the complexity of health problems, the perceived health state, and the satisfaction with care in older patients.

An earlier cross-sectional study found that the chance of *dis*satisfaction with the provided care increased with rising complexity of health problems. (39) However, the question remains whether this decreasing level of satisfaction was related mainly to the complexity of the health problems itself, or was also influenced by the perception of health state. In the aim to unravel this association, the present study focused on the perceived health state in older persons with a high level of complex problems. As expected, based on our earlier studies and literature, we found no significant effect on satisfaction after a change in the organization of care. Our finding that the various levels of perceived health state introduced no clear difference in change of satisfaction in the intervention vs. control group suggests that this is not an important modifier of patient satisfaction.

When regarding patient satisfaction as an indication of the fit of provided care, it should be taken into account that the level of complexity of health problems of the population influences patient satisfaction, and not the perceived health state. Therefore, the earlier found decreasing satisfaction with increasing complexity of health problems is more likely to be an indication of a patient-need versus care-organization discrepancy than of a negative state of mind of the patient.

Strengths

A strength of this study is that it provides a quantitative impression of the development of satisfaction in real-life implementation of person-centered integrated primary care. The trial design accommodates the reality of implementing improved care next to usual care.

The study also offers extensive in-depth data on the health state of the specific group of older persons with complex care needs; by using the TOPICS-CEP all these data have

been combined and used. The TOPICS-CEP was developed and validated as an instrument to evaluate the quality of care for older persons and has since been validated for the concept 'perceived health state' in various populations. Being an aggregation of a number of clinical, functional and psychological study-instrument outcomes it has an area of overlap with concepts such as 'care need complexity', 'multi-morbidity' and 'frailty'. (50) However, being weighted by patient and informal caregiver preferences, with general wellbeing as a reference, it distinguishes itself from these other concepts. From a clinical viewpoint, we think that it provides a useful measure.

Limitations

This study was performed in a population of older persons with self-reported problems in 3 and 4 out of 4 health domains. Therefore, it is a selected population of older persons with a high level of complexity of health problems with a decreased variation in experienced health state compared to the total population. Therefore, caution is required when generalizing these data to a population of older persons with a greater variation in level of complexity of health problems, as a greater variation in experienced health state may influence satisfaction to a differing extent.

The intervention of training GPs and practice nurses in making and performing person centred, proactive, multidisciplinary care can be seen as a step towards fully integrated care. There is however no measure for the degree of integration of care achieved. An assumption is therefore that a meaningful level of contrast in integration between intervention and control group was achieved. Differences in perceptions of the provided care in GPs between the two groups in the ISCOPE study suggests this assumption is legitimate.(35)

As the intervention group was younger and better educated than the control group at baseline some inclusion bias could have occurred. This possible bias was corrected for by not comparing the actual satisfaction levels, but the changes within the intervention and control group.

The Likert scale is widely used in the evaluation of patient satisfaction. However, quantifying change using Likert data can be done in various ways. Due to the predominance of the middle options around 'neutral' and 'satisfied', the mean or median scores show little variation. As 'very satisfied' can be considered a meaningful expression of patient satisfaction, we used the percentage of respondents choosing this option as a measure of satisfaction level. To compensate for this limitation, we used an increase and decrease of at least 1 point on the Likert scale as an alternative.

CONCLUSION AND IMPLICATIONS

We conclude that in these older persons with a high level of complexity of health problems, the satisfaction of GP care does not change during implementation of improved person-centered integrated care. In this relationship, the perceived health state does not act as an additional modifier. Therefore, the absence of a change in satisfaction must be seen more in relation to the expected and experienced care by the older persons than to their perceived state of health.

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Chapter 4

Perceived doctor-patient relationship and satisfaction with General Practitioner care in older persons in residential homes.

Claudia S de Waard*[1] & Antonius J Poot*[1], Wendy PJ den Elzen[1], Annet W Wind[1], Monique AA Caljouw[1], Jacobijn Gussekloo[1]
* Joint first authorship

[1] Department of Public Health and Primary Care, Leiden University Medical Center, The Netherlands

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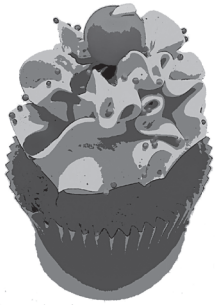

ABSTRACT

Objective

Understanding patient satisfaction from the perspective of older adults is important to improve quality of their care. Since patient and care variables which can be influenced are of specific interest, this study examines the relation between patient satisfaction and the perceived doctor-patient relationship in older persons and their general practitioners (GPs).

Design

Cross-sectional survey.

Subjects and setting

Older persons (n=653, median age 87 years; 69.4% female) living in 41 residential homes.

Main outcome measures

Patient satisfaction (report mark) and perceived doctor-patient relationship (Leiden Perioperative care Patient Satisfaction questionnaire); relationships were examined by comparing medians and use of regression models.

Results

The median satisfaction score was 8 (interquartile range 7.5-9; range 0-10) and doctor-patient relationship 65 (interquartile range 63-65; range 13-65). Higher satisfaction scores were related to higher scores on doctor-patient relationship (Jonckheere Terpstra test, p for trend < 0.001) independent of gender, age, duration of stay in the residential home, functional and clinical characteristics. Adjusted for these characteristics, per additional point for doctor-patient relationship, satisfaction increased with 0.103 points ($\beta = 0.103$, 95% CI 0.092-0.114; $p<0.001$). In those with a 'low' doctor-patient relationship rating, the percentage awarding 'sufficient or good' to their GP for 'understanding about the personal situation' was 12%, 'receiving attention as an individual' 22%, treating the patient kindly 78%, and being polite 94%.

Conclusion

In older persons, perceived doctor-patient relationship and patient satisfaction are related, irrespective of patient characteristics. GPs may improve patient satisfaction by focusing more on the affective aspects of the doctor-patient relationship.

Key points:

Examination of the perceived doctor-patient relationship as a variable might better accommodate patients' expectations and improve satisfaction with the provided primary care.

Main statements:

In older persons, a better perceived doctor-patient relationship relates to higher satisfaction with provided primary care. There is little room for improvement in the formal aspects of the relationship, such as being knowledgeable and polite. However, there is room for improvement in the more affective aspects of the relationship, such as paying attention to the patient's personal situation and to the patient as an individual.

Key words: Doctor-patient relationship, satisfaction, general practitioner, older persons, residential home, primary care.

INTRODUCTION

The widespread use of 'patient satisfaction' in the evaluation of care seems justified, considering its importance to all parties concerned. For example, for patients, satisfaction is reported to lead to greater adherence to treatment goals and recommendations [1,2]. For doctors it is relevant that patient satisfaction is positively related to higher staff satisfaction and less malpractice [2], and for policymakers the evaluation of patient satisfaction allows identification of areas for care improvement [1]. For all these parties, it is relevant that patient satisfaction is related to care outcomes and is used as an indicator of quality of care [3,4].

Patient satisfaction can be defined as "*evaluation based on the fulfilment of expectations*" [5]. It is a relative and subjective concept and no simple measure is available to quantify it. Its relation to quality of care is unclear since, for patients, it is difficult to judge the competence of the doctor, and satisfaction implies that an adequate or acceptable standard has been achieved, but not superior service(s) [2-4,6].

Many factors affect patient satisfaction, including the organisational aspects of care and the physical environment. Importantly the characteristics of the patient and doctor influence patient satisfaction [6-8]. From a patient perspective, examples include age, health status, expectations, trust, beliefs, values, and experiences [6,9,10]. Characteristics of doctors which (might) be related to patient satisfaction include age, gender, and attitude. The doctor-patient relationship is important in that it is determined by both parties [6-8,11-14].

Although the above-mentioned factors are related to patient satisfaction, many of them cannot be modified. An exception is the attitude of the doctor as one of the determinants of the doctor-patient relationship. This is important [6-8] and can be modified. To further clarify the multi-dimensional concept of patient satisfaction, the present study investigated the doctor-patient relationship as perceived by the patient, and its relationship with patient satisfaction. In this study, the doctor-patient relationship is seen as the perception of the patient concerning the amount of caring shown by the doctor and the attitude and behaviour of the doctor towards the patient (e.g., respecting patient privacy, being polite) [15]. Assuming that doctors are able to adapt these skills, the doctor-patient relationship might be a factor that can be modified to improve patient satisfaction with care, thereby making health care more responsive to patients' wants and needs.

MATERIAL AND METHODS

Study population

Older persons living in residential homes were selected for this study. These older persons have a high complexity of care needs, and are admitted to a residential home because they are unable to sufficiently coordinate their own domestic/medical care. For these persons, the general practitioner (GP) is the most important primary care provider in the Dutch setting, and these persons have often had the same GP for many years. Due to their age and (lack of) mobility they were all visited by their GP in the residential home. The GPs served these patients in the same way as patients living independently in the community.

This study is embedded in the MOVIT project in which regional implementation of integrated care for older persons living in residential homes was the primary goal. The regional project was performed in 41 residential homes in the Netherlands, and was part of the National Program for Elderly Care [16]. Older persons living in a residential home are free to choose one of the regional GPs. The approximately 300 GPs in the region can have patients in one or more residential homes.

For this study, a cross-sectional survey was performed. From October 2010 until December 2012, independent samples of older persons living in their residential home were taken. All residents were invited, except for those residents with dementia in closed psycho-geriatric wards. Residents were informed by letter. Oral consent for interview was obtained by the research nurse after repeating the study information and procedures.

To have a representative sample per residential home, it was planned to include at least 30 residents per residential home, or at least 50% of the residents in homes with fewer than 60 residents. Where necessary, a random selection of residents was made by ranking names of residents alphabetically and inviting the first consecutive uneven numbers followed (if necessary) by consecutive even numbers.

A research nurse interviewed participants by asking the questions and writing down the answers; each interview lasted about 1 h. The questions about care dependency were completed by the nursing staff. Since the present study focused on the doctor-patient relationship, only residents who reported having consulted their GP in the last 12 months were included in the analysis [17].

The study was approved by the Medical Ethics Committee of the Leiden University Medical Center.

Study parameters

Patient satisfaction

General satisfaction with the GP was recorded as a report mark given in response to the question "*Which report mark do you give your GP*?". A score of 0 indicates totally dissatisfied and 10 indicates completely satisfied.

Doctor-patient relationship

The doctor-patient relationship can be seen as the perception of the patient concerning the caring shown by the doctor, and the attitude and behaviour of the doctor towards the patient. The doctor-patient relationship was measured as a domain of the Leiden Perioperative care Patient Satisfaction questionnaire (LPPSq) [15]. This domain consists of 13 questions (see Appendix 1). Participants were asked to score each question on a 5-point Likert scale; total scores range from 13 (worst) to 65 (best).

To group participants by their level of the perceived doctor-patient-relationship, participants were divided into three groups; these groups were based on the total score of the domain of the LPPSq. For the doctor-patient relationship, a score of 13-51 was considered to be 'low', a score of 52-64 'medium', and a score of 65 was considered to be an 'optimal' perceived relationship.

Socio-demographic characteristics

Information was obtained on age, gender, the duration of stay in the residential home, educational level, and income (basic government allowance only, or also a supplementary pension).

Number of diseases and ailments

Self-reported chronic diseases and ailments were grouped within the following 19 items: diabetes mellitus, stroke, heart failure, cancer, chronic obstructive pulmonary disease (COPD, asthma), incontinence, urinary tract infections, arthritis, osteoporosis, hip fracture, other fractures, falls, dizziness, prostatism, depression, anxiety, dementia, hearing impairment, and visual impairment.

Cognitive function

Cognitive function was measured using the Mini Mental State Examination (MMSE). The questionnaire consists of 11 questions and instructions about orientation, memory, attention, naming, reading and writing. Scores range from 0 (very impaired) to 30 (not impaired) [18].

Care dependency

Care dependency was measured by the Care Dependency Scale (CDS), a tool validated for the assessment of the care dependency status of institutionalised patients. Nursing staff were asked to what extent the resident was able to perform 15 basic care needs. These items were measured on a 5-point Likert scale; the total score ranges from 15 (completely care dependent) to 75 (almost independent). The items covered are: eating and drinking, continence, body posture, mobility, day and night pattern, getting (un) dressed, body temperature, hygiene, avoidance of danger, communication, contact with others, sense of rules and values, daily activities, recreational activities and learning ability [19,20].

Wellbeing

Wellbeing was measured by a part of the RAND36 questionnaire. Participants were asked to score their feelings (in the last month) on five topics of mental health: 1) being very nervous, 2) feeling calm and peaceful, 3) feeling despondent and sombre, 4) being happy, and 5) feeling so down that nothing could cheer you up.

Participants could choose between six answer categories ranging from 'always' to 'never'. Total scores range from 0-100 with a higher score indicating better wellbeing.

Quality of life

The Visual Analogue Scale (VAS) was used to provide an overall estimation of perceived quality of life. The participant marked a point on a line that they felt represented their perception of their current state, ranging from 0-100mm (worst to best imaginable quality of life) [21].

Number of contacts with the GP

Participants were asked to categorise the number of contacts with the GP in the last 12 months: 1; 2-4; 5-9; 10 or more visits.

STATISTICAL ANALYSES

Categorical variables were expressed in percentages and differences between groups analysed with the Chi-square test (linear-by-linear). Continuous variables were expressed as median and interquartile range (IQR) and differences between groups analysed with the Jonckheere Terpstra test.

The relation between the doctor-patient relationship and patient satisfaction was examined using linear regression models. The first model measured the relationship between these two variables. In the second multivariate model, the following were

added: gender, age, educational level, income, duration of stay in the residential home, cognitive function, care dependency, psychological wellbeing, quality of life, number of diseases and ailments, and the number of contacts with the GP in the previous 12 months. Only educational level, income, and the number of contacts were categorical variables, all other variables were continuous variables.

A p-value < 0.05 was considered statistically significant. Analyses were conducted with IBM SPSS Statistics for Windows version 20.0.

RESULTS

Within the MOVIT study, 1,478 residents participated in the interviews. Participants who reported not having seen their GP in the previous 12 months (n=312) and participants who did not complete the questions about satisfaction and doctor-patient relationship (n=513) were excluded. The non-participants did not differ in baseline characteristics from the participants. This resulted in 653 participants available for the present analysis.

Participants' characteristics

Table 1 presents the characteristics of the participants. They had a median age of 87 (IQR 83-91) years and were predominantly female (69%). The median duration of stay in the residential home was 2.4 (IQR 1-5) years. Almost half of the participants (48.2%) had an educational level of primary school or less, and 24.2% of the participants had only a basic government allowance as income. More than half of the participants (64.8%) had 1-4 contacts with their GP in the last 12 months.

Doctor-patient relationship and experienced satisfaction

The median report mark for satisfaction with the GP was 8 (IQR 7.5-9.0). The median score for the doctor-patient relationship was 65 (IQR 63-65). Table 2 shows that 7.6% (n=50) reported a low perceived doctor-patient relationship, 26.0% a medium perceived doctor-patient relationship (n=170), and 66.3% an optimal perceived doctor-patient relationship (n=433).

A better doctor-patient relationship (higher score) was associated with more satisfaction experienced by the participants (p for trend <0.001). Participants with a 'low' perceived doctor-patient relationship had a median score for satisfaction of 6 (IQR 5.4-7.0).

Participants with a 'medium' perceived doctor-patient relationship had a median score for satisfaction of 8 (IQR 7.0-8.0), and those with an 'optimal' score had a median score for satisfaction of 8 (IQR 8.0-9.0) (Table 2). Between the three groups of ratings of doctor-patient relationship, there were no differences in gender, age, educational level, income and/or duration of stay in the residential home. A better perceived doctor-patient rela-

tionship was associated with higher scores for wellbeing. In the group with a 'low' perceived doctor-patient relationship the median score was 60 (IQR 42-72), in the 'medium' group it was 72 (IQR 60-88), and in the 'optimal' group it was 76 (IQR 64-88). Participants with a 'low' perceived doctor-patient relationship had significantly more self-reported chronic diseases and ailments compared to the 'medium' and 'optimal' groups.

Table 1. Characteristics of the participants (n=653)

	n	
Sociodemographic characteristics		
Female	653	453 (69.4%)
Age (years)	653	87 (83-91)
Educational level (primary school or less)	652	315 (48.2%)
Income (basic government allowance only)	640	155 (24.2%)
Duration of stay in residential home (years)	639	2.4 (1-5)
Functional and clinical characteristics		
Cognitive function (MMSE)	651	27 (23-29)
Care dependency (CDS)	644	69 (61-74)
Psychological wellbeing (RAND36/MDS)	622	76 (60-88)
Quality of life: Visual analogue scale (VAS)	628	70 (60-70)
Number of chronic diseases and ailments	653	5 (4-7)
Number of contacts with GP in last 12 months:	653	
1-4 times		423 (64.8%)
5-9 times		135 (20.7%)
≥ 10 times		95 (14.5%)
Perceived doctor-patient relationship (points)	653	65 (63-65)
Patient satisfaction (range 0-10)	653	8.0 (7.5-9.0)

Numerical data: median (interquartile range, IQR), Categorical data: n (%)

Influence of other characteristics

Higher perceived doctor-patient relation was significantly related to higher satisfaction independent of sociodemographic characteristics including gender, age, educational level, income and duration of stay. This relation was also independent of functional characteristics (MMSE, CDS, RAND36 and VAS) and of clinical characteristics (number of diseases and ailments, number of GP contacts) (see Appendix 2).

In linear regression analysis, per additional point extra for the doctor-patient relationship, satisfaction increased with 0.105 points (β=0.105, 95% CI 0.095-0.115; p<0.001). In the multivariate model this estimate did not change with adjustment for socio-demographic, functional and clinical characteristics (β = 0.103, 95% CI 0.092-0.114; p<0.001).

Table 2. Characteristics of the participants (n=653) based on their scores on perceived doctor-patient relationship

	Perceived doctor-patient relationship*			
	Low (n=50)	Medium (n=170)	Optimal (n=433)	p-value**
Patient satisfaction (report mark, 0-10)	6.0 (5.4-7.0)	8.0 (7.0-8.0)	8.0 (8.0-9.0)	<0.001
Sociodemographic characteristics				
Female	40 (80%)	119 (70%)	294 (68%)	0.115
Age (years)	85.0 (81-90)	87.0 (83-90)	87.2 (83-91)	0.153
Educational level (primary school or less)	22 (44%)	79 (47%)	214 (49%)	0.354
Income (basic government allowance only)	11 (22%)	31 (18%)	113 (26%)	0.122
Duration of stay in residential home (years)	2.6 (0.8-4.5)	2.3 (1.1-4.8)	2.5 (1.2-5.1)	0.456
Functional and clinical characteristics				
Cognitive function (MMSE)	27 (24-29)	27 (24-29)	27 (23-29)	0.759
Care dependency (CDS)	67 (59-73)	69 (62-73)	70 (60-74)	0.742
Psychological wellbeing (RAND36/MDS)	60 (42-72)	72 (60-88)	76 (64-88)	<0.001
Quality of life: Visual analogue scale (VAS)	60 (50-70)	70 (60-70)	70 (60-75)	0.002
Number of diseases and ailments	7 (5-8)	6 (4-7)	5 (3-7)	<0.001
Number of contacts with GP in last 12 months:				0.258
1-4 times	39 (78%)	106 (62%)	278 (64%)	
5-9 times	5 (10%)	41 (24%)	89 (21%)	
≥ 10 times	6 (12%)	23 (14%)	66 (15%)	

* Perceived doctor-patient relationship: low level=13- 51 points; medium=52-64 points; optimal=65 points
** Numerical data: median (interquartile range, IQR), Jonckheere Terpstra p for trend test.
Categorical data: n (%), Chi-square test, linear-by-linear.

Items of the doctor-patient relationship

To examine which items of the doctor-patient relationship showed most room for improvement, the 13 individual items of the doctor-patient relationship domain of the LPPSq were analysed. The items 'being polite' and 'being kind' were the most highly valued (mean scores of 4.93 and 4.91, respectively) (n=653). Because the scores for 'medium' and 'optimal' groups were so high that improvement was almost impossible, only the group with a 'low' rating for the doctor-patient relationship (n=50) was analyzed (Table 3). In this group, the lowest scores were found for 'Understanding of the GP about the personal situation' (12% sufficient or good), 'Attention for you as an individual' (22% sufficient or good), and 'Confidence in the GP' (24% sufficient or good). Even in this group, high percentages for sufficient or good ratings were found for being knowledgeable (50%), taking privacy into account (64%), treating the patient kindly (78%), and being polite (94%).

Table 3. Score for the individual items of the perceived doctor-patient relationship, from the 50 participants with a low perceived doctor-patient relationship

Item on perceived doctor-patient relationship (adapted LPPSq)	Score: sufficient or good (%)
Did the GP show understanding for your **personal situation?**	12
Did the GP pay attention to you as an **individual?**	22
Did you have **confidence** in the GP?	24
Did the GP pay attention to your **questions?**	28
Did the GP pay attention to your **complaints?**	28
Had the GP an **open attitude?**	30
Did you find the GP **professional?**	38
Did the GP take into account your **personal preferences?**	40
Was the GP **respectful?**	44
Did you find the GP **knowledgeable?**	50
Did the GP take into account your **privacy?**	64
Were you treated **kindly** by the GP?	78
Was the GP **polite?**	94

LPPSq = Leiden Perioperative Patient Satisfaction questionnaire (score 1-5)
GP = general practitioner

DISCUSSION

In the present study, a better perceived doctor-patient relationship was related to higher patient satisfaction in older persons in a residential home. This relation was independent of gender, age, duration of stay in the residential home, number of diseases, cognitive function, care dependency, quality of life, and number of contacts with the GP. Many participants reported a high satisfaction score and a good doctor-patient relationship.

Analysis of the group with a 'low' rating for the doctor-patient relationship shows there is very little room for improvement in the formal aspects of the relationship, such as being knowledgeable and polite. However, affective aspects, such as attention paying attention to the personal situation and to the patient as an individual, do leave room for improvement. These latter aspects have the potential to be modified. This suggests that GPs can have a favorable influence on patient satisfaction by paying attention to these specific aspects; this could also be taken into account in GP training.

Strengths and limitations

This study has several strengths. We assume that in the perceptions of the patient, there is a degree of overlap between the concepts of satisfaction and doctor-patient relationship. However, satisfaction seems to be the broader concept of the two, being influenced by the doctor-patient relationship rather than the other way around. Although 'satisfaction' and 'doctor-patient relationship' are difficult concepts, we considered it necessary

to explore the relation between these concepts in more depth. A large population of older persons living in residential homes was selected, because this group often has high medical care dependency and often has the same GP for many years. Few studies have explored this topic in this specific population. Asking participants about their experiences over time helps to ensure that the outcomes will be less influenced by a specific consultation or event. In addition, patients' satisfaction was measured by asking them to rate only one question, without making any assumptions about what we think might determine their satisfaction. Moreover, the use of a multi-component questionnaire to measure the doctor-patient relationship helped to reveal which items were scored as less optimal, enabling to focus on these specific aspects.

A limitation is the loss of the participants (32%) due to incomplete data on the level of satisfaction and on the doctor-patient relationship; possible reasons for this are that some questions may appear rather difficult, together with the length of the total MOVIT questionnaire. However, this latter group of non-participants shows no difference in baseline characteristics from the included participants.

Comparison with existing literature

Derksen et al. [22] explored the influence of perceived physician empathy on patient satisfaction and several clinical outcomes; the authors state that more evidence is required to affirm the focus on this aspect of care delivery. The importance of the doctor-patient relationship was earlier reported by Jung et al. [8]. Their study showed that patients found the aspects concerning the doctor-patient relationship to be the most important and the best evaluated aspects of care. Also important, but less valued, are the aspects which are more task-oriented, e.g. 'Getting through to the practice on the phone', 'Explaining what to do if you did not get better' and 'Referring'; the authors recommend paying extra attention to these latter aspects [8]. Whereas Jung et al. report that there is room for improvement in the task-oriented aspects of care, the present study shows that, especially the affective aspects of the doctor-patient relationship, show room for improvement. However, the task-oriented outcomes of care and affective aspects of the doctor-patient relationship often go hand in hand. This is illustrated by Thygesen et al. [23] who investigated hospital readmission in which an intervention was implemented whereby the GP and the municipal nurse visited older patients after hospital discharge. No effect was found on hospital readmission or subsequent use of primary or secondary healthcare services. However, during home visits, GPs pay special attention to the individual which might benefit other patient outcomes, such as satisfaction. Our study emphasises that older patients indeed appreciate, and expect, this type of attention.

In the present study, the doctor-patient relationship is seen as the perception of the patient concerning the caring shown by the GP, and the attitude and behavior of the GP

towards the patient [15]. In other studies, the term 'physician empathy' is often used to distinguish between the level of attitude, competency and behaviour [22,24].

Implications for clinicians and policymakers

The present study shows that, in these older persons with a median age of 87 years and a high complexity of care needs, patient satisfaction is related to the doctor-patient relationship. Persons with a better perceived doctor-relationship were more satisfied with the care delivered by their GP. Especially the affective aspects offer room for improvement and, therefore, also for increased satisfaction in this group of patients. Assuming that physicians are able to influence the doctor-patient relationship by learning/training communicative skills, this could give GPs a tool to better accommodate the expectations of patients and improve satisfaction with the care provided. These skills should focus on the GP asking (at least) about the patient's perception and enabling patients to address all the problems that they have [25,26].

Therefore, based on these findings, particularly further personalisation of care warrants attention from doctors and policymakers. Future studies should examine whether patient satisfaction measurably improves when doctors improve their skills related to the doctor-patient relationship.

Ethical approval: The study was approved by the Medical Ethics Committee of the Leiden University Medical Center (P10.150) and registered at www.trialregister.nl (NTR2679).

Consent for publication: After informing resident committees and individual participants of the study and requesting participation by letter, oral consent was obtained by the research nurse after repeating the study information and procedures.

Competing interests: The authors declare that they have no competing interests.

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Appendix 1: Domain of the Leiden Perioperative care Patient Satisfaction questionnaire

The doctor-patient relationship was measured as a domain of the Leiden Perioperative care Patient Satisfaction questionnaire (LPPSq) [15]: this domain consists of the following 13 questions:

- Did the GP take into account your privacy?
- Did you have confidence in the GP?
- Had the GP an open attitude?
- Was the GP respectful?
- Did the GP show understanding for your situation?
- Was the GP polite?
- Did you find the GP professional?
- Did the GP pay attention to your questions?
- Did the GP pay attention to your complaints?
- Did the GP take into account your personal preferences?
- Did you find the GP knowledgeable?
- Did the GP pay attention to you as an individual?
- Were you treated kindly by the GP?

Participants were asked to score **each** question on a five-point Likert scale: total scores range from 13 (worst) to 65 (best).

GP=general practitioner

Appendix 2. Patient satisfaction with general practitioner care, based on perceived doctor-patient relationship

			Perceived doctor-patient relationship relationship			
			Low (n=50)	Medium (n=170)	Optimal (n=433)	p-value*
Sociodemographic characteristics						
Gender	Male	n=200	6 (5-7)	8 (7-8)	8 (8-9)	<0.001**
	Female	n=453	6 (6-7)	8 (7-8)	8 (8-9)	<0.001**
Age (years)	<87	n=322	6 (6-7)	8 (7-8)	8 (8-9)	<0.001
	≥ 87	n=331	6 (5-8)	8 (7-8)	8 (8-9)	<0.001
Educational level (low=primary school or less)	Low	n=315	6 (6-7)	8 (7-8)	9 (8-9)	<0.001**
	High	n=337	6 (5-7)	8 (7-8)	8 (8-9)	<0.001**
Income (low = basic government allowance only)	Low	n=155	7 (5-8)	8 (7-8)	8 (8-9)	<0.001**
	High	n=485	6 (6-7)	8 (7-8)	8 (8-9)	<0.001**
Duration of stay in residential home (years)	<2.4	n=313	6 (6-7)	8 (7-8)	8 (8-9)	<0.001
	≥ 2.4	n=326	6 (5-7)	8 (7-8)	8 (8-9)	<0.001
Functional and clinical characteristics						
Cognitive function (MMSE)	< 26 pts	n=255	6 (6-7)	8 (7-8)	9 (8-9)	<0.001
(range 0-30)	≥ 26 pts	n=396	6 (5-7)	8 (7-8)	8 (8-9)	<0.001
Care dependency (CDS)	< 69 pts	n=294	7 (5-7)	8 (7-8)	8 (8-9)	<0.001
(range 15-75)	≥ 69 pts	n=350	6 (5-7)	8 (7-8)	8 (8-9)	<0.001
Psychological well-being (RAND36/MDS)	< 76 pts	n=301	6 (5-7)	8 (7-8)	8 (8-9)	<0.001
(range 0-100)	≥ 76 pts	n=321	7 (6-7)	8 (7-8)	8 (8-9)	<0.001
Quality of life: Visual analogue scale (VAS)	< 70 pts	n=301	6 (5-7)	8 (7-8)	8 (8-9)	<0.001
(range 0-100)	≥ 70 pts	n=327	7 (6-8)	8 (7-8)	8 (8-9)	<0.001
Number of diseases and ailments	< 5	n=253	6 (6-7)	8 (8-8)	8 (8-9)	<0.001
	≥ 5	n=400	6 (5-7)	8 (7-8)	8 (8-9)	<0.001
Number of contacts with GP in last 12 months	1-4 times	n=423	6 (5-7)	8 (7-8)	8 (8-9)	<0.001**
	≥ 5 times	n=230	7 (7-7)	8 (7-8)	8 (8-9)	<0.001**

GP=general practitioner; pts=points
Median patient satisfaction and interquartile range,
*Numerical data: Jonckheere Terpstra p for trend test.
**Categorical data: Chi-square test linear-by-linear

Chapter 5

Satisfaction in Older Persons and General Practitioners during the Implementation of Integrated Care.

Antonius J Poot[1], Monique AA Caljouw[1], Claudia S de Waard[1], Annet W Wind[1], Jacobijn Gussekloo[1]

[1] Department of Public Health and Primary Care, Leiden University Medical Center, the Netherlands

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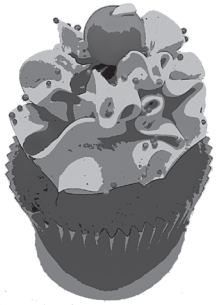

ABSTRACT

Background

Integrated care for older persons with complex care needs is widely advocated. Particularly professionals, and policy makers have positive expectations. Care outcome results are ambiguous. Receiver and provider satisfaction is relevant but still poorly understood.

Methods

During implementation of integrated care in residential homes (The MOVIT project), we compared general satisfaction and satisfaction with specific aspects of General Practitioner (GP) care in older persons and GPs before (cohort I) and after at least 12 months of implementation (cohort II).

Results

The general satisfaction score for GP care given by older persons does not change (Cohort I (n=762) mean score 8.0 (IQR:7.0-9.0) vs. Cohort II (n= 505) mean score 8.0 (IQR:7.0-8.0);P=0.01).

Expressions of general satisfaction in GPs do not show consistent change (Cohort I (n=87) vs Cohort II (n=66), percentage satisfied about; role as GP, 56% vs 67%;P=0.194, ability to provide personal care, 60% vs 67%;P=0.038, quality of care, 54% vs 62%;P=0.316).

Satisfaction in older persons about some specific aspects of care do show change; GP-patient relationship, points 61.6 vs 63.3;P=0.001, willingness to talk about mistakes, score 3.47 vs 3.73;P=0.001, information received about drugs, score 2.79 vs 2.46;P=0.002.

GPs also report changes in specific aspects: percentage satisfied about multidisciplinary meetings; occurrence, 21% vs 53%;P=<0.001, GP presence, 12% vs 41%;P=<0.001, and participation, 29% vs.51%;P=0.046.

Conclusion

General satisfaction about care received and provided shows no consistent change in older persons and GPs during the implementation of integrated care. Specific changes in satisfaction are found. These show an emphasis on inter-personal aspects in older persons and organizational aspects in GPs.

BACKGROUND

The advantages of coordinating care for patients whose condition requires the attention of more than one provider, such as older persons with complex care needs and multiple chronic diseases, can be regarded as self-evident [1]. Practical applications conceived to offer this coordination of care are generally regarded as examples of the "integrated care" concept. These practical applications are often based on the Chronic Care Model [2–4]. Older persons as receivers of care are mainly concerned with the consequences of the practical applications and less by the care model or concept according to which it is organized [5].

Integrated care and practical applications enjoy considerable support amongst professionals as shown by studies of projects, editorials and consensus expressions [6–9]. Support from research evidence however is inconclusive showing conflicting results depending on chosen outcomes, applications and settings [10–14]. Healthcare policy makers see integrated care for older persons in the community as a way of meeting the wish of citizens to grow old in their own environment while potentially also providing a solution to the economic consequences of increasing numbers of older persons with complex care needs [6,15].

Given the strong feeling that integrated care is the way to go, although unambiguous support from evidence based outcomes is lacking, perceptions of those concerned are relevant for implementation both as an element influencing acceptance and as a outcome [16]. These perceptions carry various names ranging from the subjective "general satisfaction" to the more objective "health care experiences" such as being visited at favourable times [16]. Perceptions have been shown to be influenced by observer characteristics such as age and complexity of health problems [17]. Data as to the relation of perceptions to the implementation of integrated care is scarce.

In the Netherlands older persons in residential care homes are a vulnerable population with a high level of complex care needs. They are formally admitted because they are regarded as unable to coordinate their own domestic and medical care sufficiently. The home provides accommodation, domestic and nursing care while the medical care for residents is provided by their individual GP in a similar way to that for older persons living independently in the community. The GP mainly reacts to complaints and symptoms and provides and coordinates therapeutic care in the same way as in the community using the same providers. The care home staff fulfils the role of intermediary between the resident and GP where the resident is not able to do this independently. Older persons in residential care homes are therefore expected to benefit especially from a better integration of care.

Therefore, the focus of this study is to investigate the changes in perceptions of aspects of integrated care among older persons and general practitioners (GPs) during a regional implementation of integrated care for older persons with complex care needs, living in residential homes.

METHODS

The present study was embedded in the MOVIT project which was performed in order to study the sustainable implementation of integrated care for older persons with complex care needs in a region with 523,000 inhabitants.

The project was performed within the framework of the National Program for Elderly Care (NPO) [18] in a defined geographical and administrative region (South Holland-north) of the Netherlands between 2009 and 2013. In this region there were 43 residential care homes clustered in 13 organizations with a median of 68 residents per home.

Since the focus of this paper is on the perceptions of the older persons and GPs only a concise description of the implementation and interventions is given. The core intervention in the MOVIT project was the founding of a clinical multidisciplinary team (CMT) in each home consisting of, at least, GPs, nursing staff, a pharmacist and an elderly care physician. The CMT's were allowed a large degree of freedom in choosing local improvement projects aimed at the ultimate goal of integrated care. A structural, periodic, multidisciplinary team meeting (MTM) for each resident was encouraged as an important operationalization of integrated care. The CMT's were supported in their task of choosing and initiating improvement projects by an individual on site coach and regional, professional, financial and organizational implementation interventions.

42 of the 43 homes in the project region, committed themselves to participation. 29 CMT's were formed serving 33 homes. Two more CMT's were started after the end of the project.

Improvement projects, chosen by the CMT's, were aimed at the interdisciplinary communication and cooperation aspects of medication logistics, wound treatment and (proactive) care planning and delivery. Common elements of the improvement projects were an increased and more formalized cooperation between the professions and a more important role for the nursing staff in coordinating the care and communicating with the residents.

The study was reviewed and approved by the Medical Ethics Committee of the Leiden University Medical Center.

Outcome measures and data collection

We report the outcomes of older persons living in residential care homes and their GPs, being the central professional providers of integrated medical care.

Older persons

Two independent samples of older persons, present in their residential home at that time, were taken, Cohort I before the implementation of MOVIT and Cohort II, after between 12 and 18 months of follow-up. We opted for two independent cohorts of vul-

nerable older persons instead of following the first cohort to avoid incomplete follow-up due to, cognitive decline, changing circumstances and mortality.

No residents were excluded, except those in closed psycho-geriatric wards. After informing resident committees and individual participants of the study and requesting participation by letter, oral consent for interview was obtained by the research nurse after repeating the study information and procedures. Since this study was performed to evaluate the implementation of integrated care in a series of residential homes, we planned to have a representative sample per residential home. At the start of the study it was considered a realistic goal to include at least 30 residents per home or at least 50% in the homes with fewer than 60 residents. When not inviting all residents, selection was performed by ranking residents alphabetically and inviting first consecutive uneven numbers followed if necessary by consecutive even numbers. For this study concerning the perceptions of the care provided by the GP, only those participants having seen their GP in the preceding 12 months were included.

A research nurse interviewed participants. Information on participants' socio-demographic and medical history were obtained and aspects of functioning were assessed (KATZ-15 and CDS). The KATZ-15 is a self-assessment, measuring the needs in activities of daily living (ADL) on an aggregate scale from 0 (independent in ADL) to 15 (completely dependent in ADL)[19]. Care dependency, was assessed by the nursing staff using the Care Dependency Scale (CDS; 15 items of basic care needs on an aggregate scale from 15 (completely dependent) to 75 (almost independent of care)) [20,21].

General satisfaction about the GP was recorded as a score out of an optimum of 10 in response to the question "Which mark out of 10 do you give your GP?".

Specific aspects of integrated care. Since the MOVIT project allowed the CMT's a large freedom in the improvement plans they chose to implement, each was expected to represent only a part of the broad concept of integrated care as defined by for example Minkman et al [22]. "Organization of GP contacts", "GP-patient relationship", "Communication" and "Tailored care" were considered relevant common aspects on empirical grounds . The questionnaire was constructed of validated questionnaires exploring these aspects or where not available individual questions from existing questionnaires were used or modified. These aspects as well as the individual questions fit within the definition of the general concept of Integrated Care as proposed by Minkman et al.

The 'staff-patient relationship scale' from the Leiden Perioperative Patient Satisfaction questionnaire (LPPSq) was used to measure GP-patient relationship[23]. The 'staff-patient relationship scale', measuring 13 items of satisfaction, is reported on an aggregate scale from 13 (bad) to 65 (good staff-patient relationship).

Participants answered the questions on 'communication' and 'tailored care' from the 'Consumer Quality-index (CQ-index) experiences with GP care during the day',[24] and questions concerning the organisation of GP visits. The 'communication' (4 questions)

and 'tailored care' (7 questions) sections of the CQ-index were aggregated by counting the scores on the questions divided through the total possible score on the questions together to generate an overall score on 'communication' and 'tailored care', following the CQ-index methodology[25].

The questions concerning the organization of GP contacts are reported separately and not aggregated.

GPs

At baseline (Cohort I) and after 18 months after the start of the implementation (Cohort II), all registered GPs in the project region were invited to complete a pre-structured questionnaire by email.

Similar to the reasoning behind the choice of aspects in the questionnaire for older persons, for GP's next to general satisfaction about the care provided, questions were chosen exploring common aspects arising from the improvement plans to be implemented by the CMT's, fitting in the concept of integrated care (Minkman et al.). To explore the aspect, "information exchange", questions were selected from the PIKOV questionnaire [25]. To explore the aspect "coherence of care" questions from the CQ-Index [23], originally meant for patients, were translated to the GP context. For the aspect "multidisciplinary working" no suitable questionnaire was found so new questions were formed. In table 4 the sources of the individual questions are indicated.

The 'PIKOV' measures satisfaction with quality of care of professionals In the PIKOV and the questions concerning multidisciplinary working items were scored on a 5-point Likert type scale and ranged from: 1 'disagree totally' to 5 'agree totally'. The questions concerning multidisciplinary working were chosen to reflect aspects judged to be important to GPs on the basis of empirical experience. These questions have not been externally validated yet. In the CQ-Index items were scored on a 4-point Likert type scale and ranged from: 1'never' to 4 'always [24,25].

STATISTICAL ANALYSIS

Responses to questions were recorded on a 4 or a 5-point Likert type scale. Due to the non-normal distribution of satisfaction responses with a predominance of high/good satisfaction and in order to enhance contrast, responses have been dichotomized into a low and a high satisfaction/agreement group (agree + agree totally, satisfied + very satisfied, usually + always). In the text and tables satisfaction/agreement in the case of individual questions is shown by the percentage satisfied/agreeing. In the case of an instrument with an overall score the original method of the instrument has been

followed and reported as the median with an inter-quartile range or mean with standard deviation of the overall score as well as for the individual questions.

Descriptive statistics were used, numbers and percentages were given. Differences between Cohort I and Cohort II were tested with Chi-square test in case of nominal or categorical data or Mann-Whitney U-test for non-normally distributed continuous variables. A P-value below 0.05 was considered statistically significant. Analyses were performed using IBM SPSS Statistics for Windows, version 20.0.

RESULTS

The older persons

In cohort I, 933 of the eligible 1420 older persons were interviewed of who 762 reported having had contact with a GP during the preceding 12 months (82%) and were included in the analyses. In cohort II, 646 of the 1235 eligible older persons were interviewed ; 505 of these reported having had contact with a GP during the preceding 12 months (78%) and were included in the analyses. The recruitment target was met overall, and was met or exceeded in all but 10% of the 40 homes.

Table 1 shows that the participants are predominantly female (73%) with a median age of 87 years (IQR 83-91) in both cohorts (table 1). Participants in cohort I and II differ only marginally in self assessed ADL dependency (Katz-15: 7 points (IQR 5-9) vs. 8 points (IQR 6-9); P=0.050).

The GPs

In cohort I, 36% of the 257 GP's listed in the target region responded (n=87) and after 12 months (cohort II), 32% of the 235 responded (n=66). Between the two cohorts of GPs, there were no differences in gender or years of work experience (Table 1).

General satisfaction about GP care in older persons and GPs

Table 2 shows the general satisfaction of received GP care in older persons in cohort I and II who had at least one contact with a GP in the preceding 12 months.

The high median report mark of 8 is found in both cohorts, the second cohort showing a smaller interquartile range resulting in a statistical drop in satisfaction (P=0.019).

In GPs a comparison of general satisfaction between cohort I and II in table 2 shows unchanged satisfaction with their role as GP in the home, (56 to 67%; P=0.194) and the quality of GP care provided, (54 to 62%; P=0.316), and an increased satisfaction about the ability to provide personalised care (60 to 76%; P=0.038).

Table 1. Characteristics of participating older persons having had at least one contact with a General Practitioner in the preceding 12 months and participating General Practitioners

	Cohort I		Cohort II		P-value*
Characteristics of older persons	n=762		n=505		
Female; n,(%)	553	(73)	342	(68)	0.063
Age; median, (IQR)	87	(82-90)	87	(82-90)	0.949
Length of stay in years median, (IQR)	2.4	(1.1-4.9)	2.4	(1.0-4.5)	0.625
Functioning					
ADL dependency; KATZ-15:median, (IQR)	7	(5-9)	8	(6-9)	0.050
Care dependency; CDS: median, (IQR)	69	(60-73)	70	(63-73)	0.164
Cognition; MMSE: median, IQR)	26	(22-28)	25	(22-28)	0.336
Comorbidity; median, (IQR)	5	(3-6)	5	(3-7)	0.921
Characteristics of General Practitioners	n=87		n=66		
Female; n,(%)	33	(38)	21	(32)	0.433
Age; median, (IQR)	52	(44-57)	55	(47-59)	0.080
Years' work experience; median, (IQR)	20	(12-25)	21	(11-28)	0.330

* percentages were compared with Chi-square test; median scores with Mann-Whitney U-test,
IQR = inter quartile range;
ADL= activities of daily living; MMSE = mini mental state examination; CDS = care dependency scale, range15-75 (75 = independent); KATZ-15: range 0-15 (15 = dependent)

Satisfaction about specific aspects of integrated care in older persons and GPs

Older persons (Table 3)

Organization of GP visits

The number of participants reporting having seen the same GP all the time increases between cohort I and II (58 to 67%; P=0.003), while the appreciation of organizational aspects like the timing and promptness of visits remains stable at a favourable level.

GP-patient relationship

Participants of cohort II report a significantly higher satisfaction about the GP-patient relationship (61.6 to 63.3 points; P=0.001) as a whole, and specifically interpersonal aspects like 'takes privacy into account', 'being polite' and feeling 'kindly treated'.

Communication and tailored care

The overall scores for 'communication' and 'tailored care' did not change between the two cohorts (respectively 3.6 vs. 3.6;P=0.687 and 3.3 vs. 3.3;P=0.922). On item level, some changes were seen. According to the participants in cohort II, GPs are more willing to talk about mistakes or things that had not gone well compared to participants in cohort I (P=0.001). They were also more satisfied about collaboration between GPs and other caregivers (P=0.031). On the other hand, older persons in cohort II feel less informed by GP's about possible side effects of prescribed drugs (P=0.002).

Table 2. General satisfaction about General Practitioner care reported by older persons and General Practitioners

	Cohort I		Cohort II		P-value*
Older persons: Satisfaction about received GP care	N=762		N=505		
Score on a scale 1-10 (10 = best); median, (IQR)	8.0	(7.5-9.0)	8.0	(7.0-8.0)	0.019
GPs: Satisfaction about provided care n, (%)	N=87		N=66		
Are you satisfied about …					
… your role as GP in the home?	49	(56)	44	(67)	0.194
… your ability to provide personal care for your patients?	52	(60)	50	(76)	0.038
… the quality of GP care your patients receive?	47	(54)	41	(62)	0.316

* percentages were compared with Chi-square test; median scores with Mann-Whitney U-test,
IQR= inter quartile range; GP=General Practitioner

General Practitioners (Table 4)

Information level

GPs in cohort II are more satisfied about their own level of patient information and that of caregivers in general, concerning the health of their patients (respectively 75 to 89%; P=0.024 and 48 to 66%; P=0.029). Satisfaction about information exchange on the topics of well-being, social problems, somatic problems, mental problems and consultation with patients and family all show consistent although, non-significant increases between cohort I and II.

Coherence of care

Satisfaction about sufficient coordination of care rises between cohort I and cohort II (51% to 71%; P=0.021). GPs in cohort II report having one contact nurse all the time more often than cohort I (29% to 51% P=0.006). Satisfaction about other expressions of coherence of care like clearly defined responsibilities, written agreements about care and seeing agreements performed in daily care, did not show significant differences between cohort I and II.

Multidisciplinary consultation

The occurrence of MTM rises from cohort I to cohort II (21 to 53%; P<0.001) as well as the presence of GP's (12 to 41%; P<0.001) during the meeting. The satisfaction of the GP's about their participation during the MTM increases from cohort I to cohort II (29% to 51%; P=0.046). GP's report a, non-significant, improvement in the performance in daily care of the agreements made during the MTM (51 to 63%; P=0.273) and satisfaction about one on one consultation between GP and nursing staff remains unchanged at 82%.

Table 3. Satisfaction about specific aspects of integrated care in GP care in older persons.

	Cohort I (n=762)		Cohort II (n=505)		P-value*
Organization of GP contacts n, (%)					
I always saw the same GP	371	(58.2)	291	(67.2)	0.003
The GP always came at the arranged time	392	(77.8)	262	(81.4)	0.215
The GP always visited me at favourable times	386	(70.1)	247	(68.4)	0.601
When needed the GP, always came within 24 hours	379	(88.1)	281	(89.8)	0.484
GP-patient relationship (adapted LPPSq: scale 1-5);					
Total score; (SD)	**61.64**	**(7.10)**	**63.27**	**(6.15)**	**0.001**
To what degree…					
did the GP take your privacy into account?	4.71	(0.69)	4.83	(0.58)	0.003
did you have confidence in the GP?	4.60	(0.84)	4.52	(1.05)	0.203
did the GP have an open attitude?	4.63	(0.78)	4.71	(0.86)	0.105
was the GP respectful?	4.73	(0.66)	4.80	(0.71)	0.167
did the GP show understanding for your situation?	4.57	(0.89)	4.68	(0.91)	0.066
was the GP polite?	4.89	(0.34)	4.95	(0.29)	0.002
did you find the GP professional?	4.68	(0.73)	4.75	(0.78)	0.128
did the GP pay attention to your questions?	4.67	(0.75)	4.67	(0.92)	0.971
did the GP pay attention to complaints like pain?	4.65	(0.79)	4.71	(0.84)	0.269
did the GP take your personal preferences into account?	4.68	(0.73)	4.74	(0.78)	0.299
did you find the GP knowledgeable?	4.73	(0.65)	4.77	(0.73)	0.325
did the GP pay attention to you as an individual?	4.63	(0.83)	4.67	(0.93)	0.467
were you treated kindly by the GP?	4.86	(0.47)	4.94	(0.33)	0.001
Communication (scale 1-4);					
Total score; (SD)	**3.60**	**(0.78)**	**3.62**	**(0.79)**	**0.687**
Did the GP give understandable explanation about the results of investigations?	3.56	(0.92)	3.56	(0.95)	0.977
Did the GP tell you what you wanted to know about your complaint/ health problem?	3.57	(0.87)	3.62	(0.88)	0.478
Did the GP explain things in an understandable way?	3.67	(0.80)	3.67	(0.85)	0.968
Was the GP willing to talk about mistakes or things that you think did not go well?	3.47	(1.04)	3.73	(0.79)	0.001
Tailored care (scale 1-4);					
Total score; (SD)	**3.28**	**(0.82)**	**3.29**	**(0.78)**	**0.922**
Were you well informed by the GP about the different treatment possibilities?	3.15	(1.24)	3.33	(1.16)	0.061
Did you have a say in the treatment or help you received?	3.31	(1.14)	3.39	(1.11)	0.349
Did the GP inform you about possible side effects of prescribed drugs?	2.79	(1.39)	2.46	(1.45)	0.002
Did the GP explain why it was important to follow his/her instructions?	3.26	(1.18)	3.22	(1.26)	0.644
Did the GP work well with other caregivers?	3.78	(0.65)	3.87	(0.54)	0.031

Table 3. Satisfaction about specific aspects of integrated care in GP care in older persons. (continued)

	Cohort I (n=762)		Cohort II (n=505)		P-value*
Did the GP have attention for emotional problems having to do with your health?	3.33	(1.14)	3.24	(1.25)	0.332
Did the GP help in preventing diseases or improve your health?	3.52	(0.98)	3.50	(1.06)	0.835
Did the treatment of the GP reduce your health problems?	3.14	(1.08)	3.28	(1.06)	0.077

* percentages were compared with Chi-square test; median scores with Mann-Whitney U-test,
Item scores reported as mean with standard deviation (SD) ;
LPSSq = Leiden Perioperative Patient Satisfaction questionnaire; GP=General Practitioner;

Table 4. Satisfaction about specific aspects of integrated care of GP care in General Practitioners.

	Cohort I (n=87)		Cohort II (n=66)		
	n	%	n	%	P-value*
Information exchange					
I am sufficiently informed about …[#]					
… the health of the patients	65	74.7	58	89.2	0.024
… the well-being of the patients	50	57.5	45	69.2	0.138
… the social problems of the patients	30	34.5	31	47.7	0.100
… the somatic problems of the patients	74	85.1	59	90.8	0.292
… mental problems of the residents	58	66.7	49	75.4	0.244
I have sufficient consultation with patients and family[#]	39	44.8	35	53.8	0.271
Caregivers are sufficiently informed about the illnesses and health problems of the patients[##]	38	47.5	39	66.1	0.029
Coherence of care					
Coordination of care between caregivers is sufficient[##]	38	51.4	40	71.4	0.021
There is sufficient consultation with nursing staff about patients[##]	27	31.0	38	63.3	<0.001
There is one contact nurse all the time[##]	25	28.7	31	50.8	0.006
Each disciplines' responsibilities are clear[#]	42	48.3	32	49.2	0.907
Are there written agreements about the care of patients?[##]	34	43.0	28	50.0	0.424
Did you see the agreements between the responsible nurse/carer and GP in the daily care for the patients?[##]	56	77.8	42	80.8	0.686
Multidisciplinary working					
Occurrence multidisciplinary team meeting (MTM)[###]	18	20.7	32	53.3	<0.001
GP present at MTM[###]	9	12.3	21	41.2	<0.001
Are you satisfied about your participation in the MTM?[###]	11	28.9	20	51.3	0.046
Agreements made in the MTM are performed in daily care.[###]	20	51.3	26	63.4	0.273
One on one consultation between GP and nursing staff[###]	71	81.6	49	81.7	0.993

* percentages were compared with Chi-square test; median scores with Mann-Whitney U-test,
MTM=multidisciplinary team meeting; GP=General Practitioner;
Source of questions; [#] Pikov, [##] CQ-Index, [###] New

DISCUSSION

In this study, we found that after a year of implementation of various aspects and degrees of integrated care, neither older persons nor GPs show consistent changes in general satisfaction about GP care. Although some remain unchanged, both older persons and GPs do report changes in satisfaction about specific aspects of integrated care after a year of implementation. Older persons report seeing the same GP more often, having a better GP-patient relationship and are more satisfied about the collaboration between GPs and other care providers. They are less satisfied about the information received from their GP about medication use. We consider that the higher self-assessed ADL (Katz-15) dependency in the second cohort does not indicate a relevant difference in population since it is the only changed parameter and (marginally) not significant.

This study also shows that GPs in the second cohort report higher levels of satisfaction about practical aspects of care such as information exchange and coherence of care and desirable practical aspects like a constant contact nurse and increased participation of GP's in multidisciplinary team meetings.

GPs in the second cohort are more satisfied about their ability to provide personal care for their patients than those in the first cohort. Other studies have shown that improved clinical outcomes are often absent after the complex, real life implementation of various forms of integrated care[12,[26] while providers are often satisfied about the associated changes in care organization [26,27]. Our findings of higher satisfaction with practical aspects and the ability to provide personal care seem consistent with this evidence.

Distinction is sometimes made between patient perceptions about care experiences such as waiting times for appointments and more general perceptions which are called satisfaction [16,28]. Since, in this study, we have not investigated the objective grounds for the perceptions of older persons and GPs, we have chosen to regard all their perceptions as expressions of satisfaction. On listing the expressions that have changed in older persons an emphasis on communication aspects is apparent and an organizational emphasis in GPs. The lower satisfaction about the information provided by the GP about medication in the second cohort of older persons could be an indication of difficulty with the revision of professional roles, since many improvement projects were aimed at a more prominent role for the nursing staff in medication logistics.

We have not been able to find other studies, which like ours, place the patient experience next to the provider experience simultaneously during the pragmatic implementation of integrated care. We find that general satisfaction remains unchanged while satisfaction about particularly inter-personal aspects in older persons and organizational aspects in GPs, do change. Satisfaction can be seen as an expression of the degree to which expectations are met. It seems plausible that older persons will have clearer expectations concerning the conduct of their care providers than their organization and

technical expertise. This could explain why patient satisfaction is more likely to reflect communication aspects. This caries practical implications for the implementation of integrated care for older persons. Perceptions of patients and care providers are an important consideration in an implementation strategy. If differences in satisfaction, between patients and GPs about specific aspects of care innovations are expected this should be taken into account. If possible the choice and nature of innovations can be tailored to accommodate expectations and preferences of these and other affected groups. Especially when negative satisfaction effects are expected for a particular group from an innovation which is none the less considered worthwhile this should be taken into account. Possibly proactively explaining to the respective groups what effects can be expected for them from particular innovations and why a tradeoff might have to be made between aspects which are considered more important by one or another group could counter a negative effect on the implementation.

Our findings further implicate that although generally satisfaction is considered important, when using it to evaluate implementation, careful consideration should be given to the satisfaction of which group, about what particular aspect is being used.

Strengths and weaknesses

Strengths of this study are that both general satisfaction and satisfaction on specific aspects of integrated care were determined in a large population of the most important participants, simultaneously, during a real life implementation of integrated care. We used validated and dedicated instruments. In this way our study reflects the real parallel perceptions of older persons and GPs before and after the implementation against the background of changes in care and society.

Weaknesses of this study are the often encountered consequences of performing a study of complex interventions during a complex implementation in a complex environment [29]. For example the incomplete response on the part of GPs could mean that particularly those with an interest in care for older persons participated. As the response in the second cohort is slightly lower the implementation could have resulted in a further selection of positively motivated GPs. Whether this would bias the outcomes toward lower or better satisfaction we cannot say.

Some older persons might have experienced the visit of the research nurse as an element of care. This is however unlikely to have influenced the difference between the two cohorts since it would have been a comparable effect in both.

Another weakness follows from the implementation strategy namely the freedom the CMTs had in translating the general concept of integrated care to their preferred improvement plans. This meant that few relevant complete evaluation instruments could be used and we had to use parts of these. In showing the individual questions we have

attempted to make this transparent to readers. Further validation of these empirical questions is needed.

By focusing on the perceptions of the patients and GPs concerning care without measuring health outcomes we cannot draw any conclusions about the relation between the two and the implementation of integrated care.

Although our repeated cross-sectional study with a maximal participation of the vulnerable older persons did answer our aim of investigating the changes in general satisfaction during a real life implementation, a study with repeated measurements would have given information about the effect of integrated care on the satisfaction development in individual patients.

CONCLUSION

General satisfaction about care received and provided does not show relevant changes in older persons and GPs during the implementation of integrated care. Satisfaction about some specific aspects of integrated care does change showing an emphasis on inter-personal aspects in older persons and organizational aspects in GPs.

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Chapter 6

A structured process description of a pragmatic implementation project: improving integrated care for older persons in residential care homes.

Antonius J Poot[1], Claudia S de Waard[1], Annet W Wind[1], Monique AA Caljouw[1], Jacobijn Gussekloo[1].

[1]Department of Public Health and Primary Care, Leiden University Medical Center, Leiden, The Netherlands

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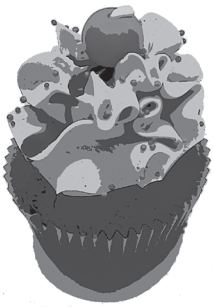

ABSTRACT

Background

Evaluation of the implementation of integrated care can hinder trial-based research due to its complexity. Therefore, we examined whether a theory-based method for process description of implementation can contribute to improvement of evidence-based care.

Methods

MOVIT, a Dutch project aimed at implementing integrated care for older vulnerable persons in residential care homes, was used as a case study. The project activities were defined according to implementation taxonomy and mapped in a matrix of theoretical levels and domains.

Results

Project activities mainly targeted professionals (both individual and group). A few activities targeted the organizational level, whereas none targeted the policy level, or the patient, or the 'social, political and legal' domain. However, the resulting changes in care delivery arrangement had consequences for professionals, patients, organizations, and the social, political and legal domain.

Conclusion

A structured process description of a pragmatic implementation project can help assess the fidelity and quality of the implementation, and identify relevant contextual factors for immediate adaptation and future research. The description showed that, in the MOVIT project, there was a discrepancy between the levels and domains targeted by the implementation activities and those influenced by the resulting changes in delivery arrangement. This could have influenced, in particular, the adoption and sustainability of the project.

BACKGROUND

There is broad consensus amongst medical professionals and policymakers that the concept of integrated care offers opportunities in meeting the demands of the growing group of older persons with combined care needs in the population.[1-3] Although interpretation of the concept of integrated care varies, it generally involves integration of cure and care on the one hand, and user and provider perspectives on the other.[3] Practical applications are often based on the Chronic Care Model.[4-8] In this latter model, improved functional and clinical patient outcomes are achieved through a productive interaction between an informed and activated patient and a proactive care team. This interaction takes place within the context of a supportive community and healthcare system.[9-11]

Implementation often takes the form of complex intervention projects in a system with multiple independent professional disciplines, and organizations with individual objectives, operating and adapting in a changeable environment while performing multiple interventions in various ways, to differing degrees, resulting in non-linear, disproportionate and unforeseen (emergent) outcomes.[12-14] Project components can be adapted to the changes that occur and the outcomes that emerge, and can evolve in order to attain the project objectives.

While comparative trial-based research on the causal mechanisms between the interventions and their outcomes is often preferred, real-life implementation projects can encounter problems meeting the rigorous demands of such an evaluation approach.[13-18] In the present study, the term 'pragmatic' is used to characterize a real-life implementation project with a high degree of adaptiveness which is aimed more at demonstrating the *applicability of the approach* than the efficacy of an intervention.[19,20] To study complex interventions in the context of evidence-based healthcare, various (research) conceptual frameworks have been proposed, such as those based on a realist approach, sociological theory, mathematical modeling, program theory, and the theory of Complex Adaptive Systems.[13-15,21,22] Besides these frameworks, approaches with a more descriptive character have also been used , such as those for strategies, determinants and levels of implementation interventions.[23-25]

We propose that a structured process description of pragmatic (adaptive) care implementation projects (which do not meet the requirements of specific (research) conceptual frameworks) can also offer a valuable contribution to the evidence-based development of improved healthcare. This paper describes how, retrospectively, a matrix was developed, using descriptive frameworks, to describe the process of a pragmatic real-life implementation project which does not conform to the research requirements of existing (research) conceptual frameworks.

During development of the matrix, the MOVIT project was used as a case study. The MOVIT project (as part of a national elderly care improvement program in the Netherlands) aimed to develop and evaluate an implementation strategy for integrated primary care for older persons with complex needs living in residential care homes.[26]

Towards an ideal of integrated care, the intended improvement in medical care was to coordinate the care provided by general practitioners (GPs), elderly care physicians, pharmacologists and nursing staff, and to initiate a long-term process so that further steps would be taken in that direction. The general strategy was that, within a larger administrative region, local working groups were initiated and supported per residential home and allowed a large degree of freedom in determining their local priorities and steps towards integrated care. Support was provided for the local groups by information provision, logistical support, and team coaching. At a regional level, educational sessions were organized and support was provided in negotiating facilities and terms.

At the start of the project, the project components were developed based on (a selection of): i) general implementation theory, ii) a small-scale pilot, and iii) interviews with stakeholders (care financiers, residential care home governors/managers, GPs, nursing staff, pharmacists, and elderly care physicians).[27] During the 3-year project, components were adapted according to the obstacles and changes encountered, wherever possible within the constraints of the original project design. All MOVIT components were documented in a toolkit (in Dutch).

Appendix 1 provides additional details on the background, setting, stakeholders, project team, strategy, specific project components, and progress and follow-up of the MOVIT project.

METHODS

Development of a new matrix

A new matrix was constructed combining two existing frameworks: i) 'levels of organization influenced by implementation' (originating from Shortell) and ii) 'domains of implementation' (originating from Flottorp et al.).[24, 25] They were combined since individually they specify different aspects of an implementation strategy and together they provide a comprehensive matrix in which defined project activities can be positioned according to their intended target domain and level and, thus, in total providing a structured description of the project. Criteria for the choice of these particular frameworks are their recognition in implementation science and their applicability to the described project. [28]

Levels of organization influenced by implementation were distinguished by Shortell (2004) in a framework for change to address the managerial and organizational challenges facing healthcare delivery in the USA.[25] Although based on the USA healthcare

situation, these levels are regarded as generalizable and were recognized as being applicable to our project.[28]

These levels are: 1) policy, 2) organization, 3) group professional, and 4) individual professional. In the new matrix, these levels were listed vertically.

Domains of implementation were established by Flottorp et al. (2013) after reviewing frameworks listing the determinants of practice that might prevent or enable care improvement.[24] These domains were seen as headings under which implementation activities fall that have a common focus. The domains are; 1) guideline factors, 2) individual health professional factors, 3) professional interactions, 4) patient factors, 5) incentives and resources, 6) capacity for organizational change, and 7) social, political and legal factors. In the matrix these domains were presented horizontally.

Categorizing components of case study MOVIT in the new matrix

To be able to categorize the evolved MOVIT components, the Cochrane Effective Practice and Organization of Care Review Group (EPOC) Taxonomy 2015 was retrospectively applied.[23] This taxonomy was originally developed in 2002 by the EPOC editorial team as a framework for characterizing implementation interventions and was updated in 2015. However, initially we used the 2002 version, with its comprehensive coverage and international acknowledgement, and converted to the 2015 version when it became available. The complete taxonomy was searched for items closely fitting the MOVIT components to identify the EPOC implementation strategies and delivery arrangements, grouped in their categories and subcategories. A proposal was made by the author and discussed by the project team. When consensus was reached these were placed in tables (each item with the related MOVIT components and their objectives) (see Appendix 2 and 3). Taxonomy items not represented in the project, and MOVIT activities not meeting the definition of an implementation strategy, financial arrangement or delivery arrangement, are not shown in the tables (see Appendix 2 and 3).

Filling the matrix

Each of the implementation strategies and financial arrangements was placed in the matrix, according to the level of organization that was targeted and the domain of implementation it influenced. Since the changes in care delivery arrangements were neither planned nor initiated by the project team, but were initiated by local MOVIT teams, these were placed in the matrix separately, according to the domains affected and the levels of implementation.

RESULTS

In this section we present the result of applying the developed matrix to the MOVIT project in figures and text. Appendix 1 provides a narrative description of the project and Appendix 2 and 3 detailed illustrations of applying the described method.

Figure 1 presents the results of mapping the EPOC items present in MOVIT in the matrix of levels and implementation domains: a clustering of implementation activities can be seen ('Financial arrangements' and 'Implementation strategies') mainly at the levels of individual and groups of professionals within the domains of professional individual functioning and group interactions. As part of the project plan, the level of the organization and the domain of guideline formation are targeted to a lesser degree, whereas the policy level, and the 'patient', 'capacity to change' and 'social/political/legal' domains are not targeted at all.

Figure 1 shows that the identified EPOC taxonomy 'Financial arrangements' and 'Implementation strategies' are positioned in the matrix of targeted 'Levels of organization' and 'Domains of implementation'. Appendix 2 presents background information on Figure 1, i.e. specifying the relation between the EPOC 'Implementation strategies' and 'Financial arrangements', and the MOVIT project activities and objectives.

The following example illustrates how this results in the placement of an EPOC item in the matrix. The MOVIT component 'Coached local team meetings', closely fits the EPOC

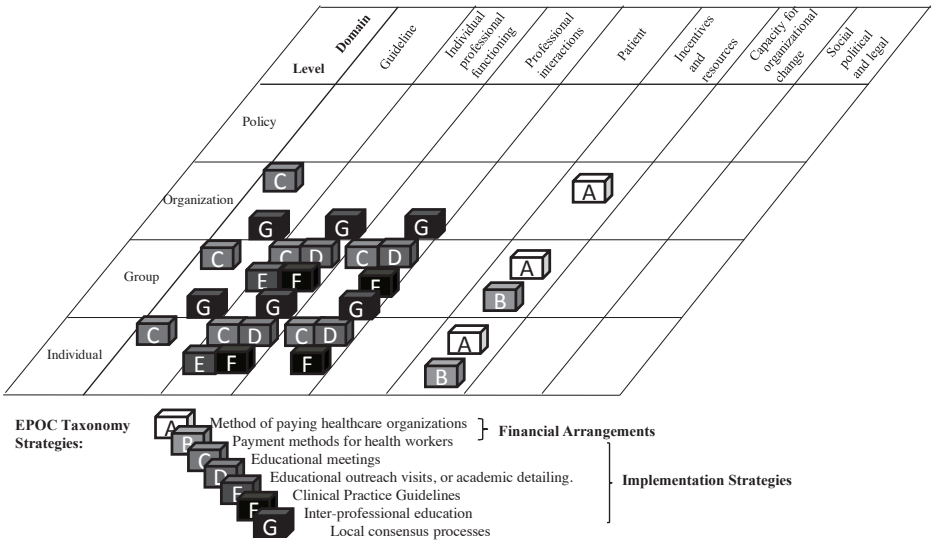

Figure 1. Identified Effective Practice and Organization of Care (EPOC) taxonomy "Financial arrangements" and "Implementation strategies" positioned in the matrix of targeted "Levels of organization" and "Domains of implementation".

definition 'Educational outreach visits, or academic detailing'. The last column of Appendix 2 reports the contribution of these meetings to the MOVIT project objectives. In this case: 'Team formation. Awareness and knowledge improvement. Translation of general theory to the local situation. Improved care organization'. In Figure 1, the EPOC label 'D' for 'Educational outreach visits, or academic detailing', is positioned in the matrix having targeted (vertically) the levels of the 'individual' professional and the 'group' of professionals and (horizontally) the domains of 'Individual professional functioning' and 'Professional interactions'.

Figure 2 shows the domains and levels of implementation affected by the changed 'Delivery Arrangements'. The figure shows that, besides the domains of 'Development of guideline consensus', 'Functioning of the individual professional' and 'Professional interactions', the domains of 'Patient', 'Incentives and resources', 'Capacity for organizational change' and the 'Social, political and legal domain' are also affected. These domains are variously influenced from the level of the individual professional to the policy level through those of the groups of professionals and organizations.

Figure 2 shows the changes in delivery arrangements that occurred during the project in the affected levels and domains. It becomes apparent that shared care and comprehensive geriatric assessment by the teams are important elements in the project, and that they are associated with role expansion, task shifting, and communication between providers. It can also be seen that these changes in delivery arrangements not only impact individual professionals and groups of professionals regarding their guidelines, functioning and interactions, but also impact the individual patient, as well as profes-

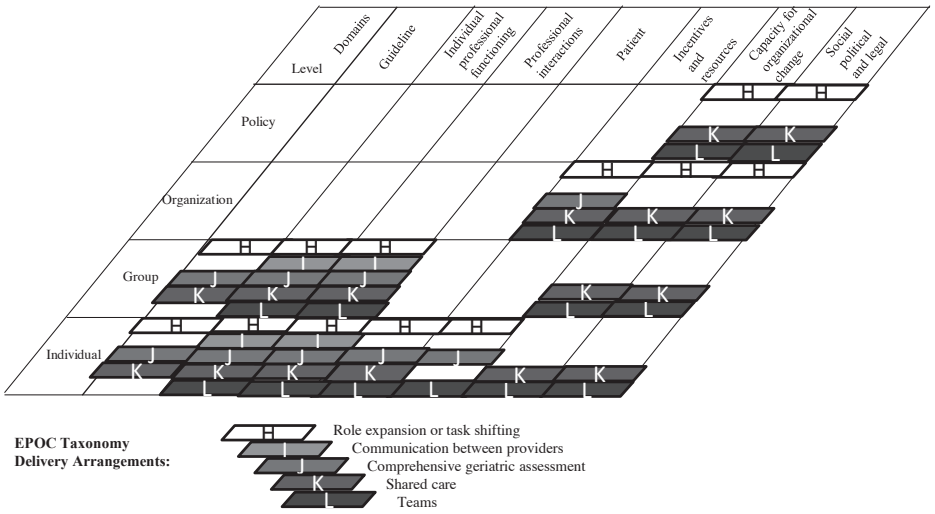

Figure 2. Identified Effective Practice and Organization of Care (EPOC) taxonomy "Delivery arrangements" positioned in the matrix of influenced "Levels of organization" and "Domains of implementation".

sionals and organizations, regarding incentives and resources, capacity for organizational change, and social, political and legal matters.

Appendix 3 specifies which changes in delivery arrangements occurred during the project through the activities of the local working groups which fall within defined EPOC 'Delivery Arrangements'. They represent the contribution made to the overall MOVIT objective of implementing improved integrated care.

As an example, Appendix 3 shows that the MOVIT components 'Coached local team meetings', 'Regional educational meetings', and 'Support for clinical improvement plans of local teams' fit into the EPOC delivery arrangement 'Shared care'. Figure 2 shows that this delivery arrangement (labelled with 'K'), influenced different levels vertically and all of the implementation domains (apart from guideline development) horizontally.

Figure 3 shows the overlap and discrepancy between the levels and domains targeted by 'Financial arrangements' and 'Implementation strategies', and the levels and domains affected by the resulting 'Delivery arrangements'. It can be seen that there is a large degree of overlap in the domains of individual professional functioning and professional interactions at the individual and group levels, and that the discrepancy is mainly in the capacity for organizational change and social, political and legal domains, where there are resulting delivery arrangements but no implementation strategies and financial arrangements. Also in the 'Patient' domain of implementation, there are changes in delivery arrangements but no implementation activities.

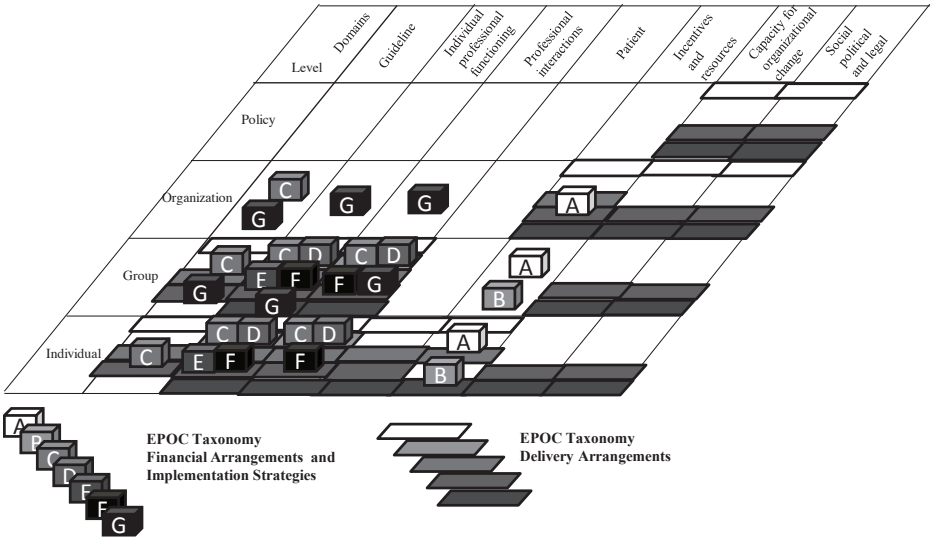

Figure 3. Identified Effective Practice and Organization of Care (EPOC) taxonomy "Financial Arrangements" and "Implementation Strategies" and the resulting "Delivery arrangements" shown together in the matrix of "Levels of organization" and "Domains of implementation".

DISCUSSION

The United Kingdom Medical Research Council, in its guidance on developing and evaluating complex interventions, makes clear its preference for systematic experimental evaluation but also states that, as a consequence of practical constraints, less rigorous methods can also offer 'useful results'.[29] The Council emphasizes that, besides the evaluation of outcomes, a process evaluation can be used to assess the fidelity and quality of implementation, clarify causal mechanisms, and identify contextual factors associated with variation in outcomes.

In the case study of the MOVIT project, the process description matrix shows that the main target was the cooperation of the professionals at an individual and a group level. While the implementation strategies were primarily aimed at these levels and domains, the resulting changes in 'Delivery Arrangements' had a much broader impact, i.e. at the organization and policy level, and in the 'Patient', 'Capacity for organizational change' and 'Social, Political and Legal' domains. Although some project activities in the narrative project description involved these domains and levels, the fact that they did not meet the definition of the EPOC implementation strategies suggests that they were insufficiently developed.

This process description fits the observation that the professionals and managers directly concerned with the delivery of care, adopted the MOVIT approach by participating in the local teams and starting initiatives aimed at the further development of integrated care and translating them to new delivery arrangements. The continuation of the local teams and the starting of new ones (as well as requests for further support/development after project cessation) are indications that the changes in professional cooperation are sustainable. However, the reluctance of managers and governors to commit to further adoption is a matter of concern. It suggests that the overall implementation strategy has failed to bridge the gap between professional motivation and governance adoption, and raises the question whether more implementation strategies aimed at the domains and levels affected by the changed delivery arrangements would have been beneficial for further penetration, adoption and sustainability. It also raises the question whether more effective involvement of the patient perspective would have helped to bridge this gap.

We note that, in the MOVIT project, the freedom to choose, adapt and reconfigure interventions by the local teams (contributing to integrated care) can be regarded as a success factor, and insufficient strategic handling of contextual factors as a weakness. Specifically, the matrix (Fig. 3) shows that contextual factors (e.g. guideline development, and individual and group functioning of professionals) were well covered by the implementation strategies. On the other hand, particularly contextual factors (e.g. incentives and guidelines falling in the domains 'Incentives and resources', 'Capacity to

change' and 'Political, social and legal') were not covered by project activities; because these contextual factors were neglected and might be underdeveloped, they need to be critically reviewed. In brief: some stakeholders experience the consequences of changes without having been consulted, prepared or compensated in areas which could be essential to them. Generally speaking, this can be considered detrimental to the adoption and sustainability of change.

A more general reflection on the mechanisms of successful implementation based on the MOVIT project is that room for adaptation of the design and the positioning of interventions and contextual influences (e.g. financial arrangements) is a bonus. Therefore, any discrepancy between targeted and influenced levels and domains should be carefully reviewed, as this can provide useful clues for the necessary adaptation of the overall implementation strategy. This observation aligns with: i) the conceptual framework of Kitson et al. in which (besides the level of evidence) the context in which the evidence is implemented, and the method of facilitating the change, are considered equally important, and ii) the model of Grol et al. that proposes that an iterative or cyclic implementation process is preferred for sustainable change in care.[30, 31]

We have chosen to use the EPOC taxonomy of implementation strategies and care arrangements and to use the frameworks of Flottorp et al.[24] and Shortell [25] for the domains and levels of implementation, respectively. However, other taxonomies and frameworks that we could have used are available; Powell et al. provide an overview of both in their publication 'Methods to Improve the Selection and Tailoring of Implementation Strategies'.[32] Although each has their particular focus and qualities, we think that the choice does not fundamentally affect our matrix. Nevertheless, it is essential that the selected taxonomy is suitable for the context of the project, and that the framework encompasses levels and domains of implementation. Although we have not included organizational performance and patient care outcomes, adding these and applying the matrix in the context of, e.g., the 'Logic Model' can result in more comprehensive evaluation in the context of implementation research.[33]

In conclusion, we regard our method as a structured process description which can be used as it stands to be learned from and to improve practice-based projects, or as a basis for more rigorous evaluation. By offering a basis for the assessment of fidelity, quality and contextual factors, we found that this structured process description can help to use a pragmatic implementation project to make documented, experience-based steps towards improved care organization. For further generalization, more experience with the matrix is required.

Strengths, limitations and future developments

Studies and publications in medical implementation science are ideally aimed at understanding the underlying processes, and the efficacy of specific interventions and

methodology; generally, the most convincing are those based on comparative trial studies. Our retrospective approach of a pragmatic project does not meet these standards. However, a strength of our approach is that a real-life project was used to develop and illustrate the use of a theory-based method that accommodates its full complexity. The matrix itself is a combination of previously described frameworks; we minimized the use of new terminology to avoid adding to the already considerable amount used in implementation literature. [34]

A methodological aspect of the matrix requiring development is the transparency and robustness of the translation process from project components to the EPOC-defined implementation strategies and arrangements. Also, the alignment of project activities, implementation theory and the taxonomy used requires attention. For example, our inability to define some of the MOVIT components in the taxonomy could be due to the original choice and design of these activities that were based on a more limited or different scope in 2009 compared with that of the 2015 taxonomy. Better alignment could benefit the outcomes of a project, as well as contributing to scientific progress. Examples of recent work are the assessment of context in care homes and the possibilities that feedback to stakeholders offer (reported by Estabrooks et al.), and the realist approach in general and the realist review of effective healthcare in homes in particular (as presented by Goodman et al.).[21,35,36]

CONCLUSION

A matrix was developed as a method for a structured process description of a pragmatic implementation project. This matrix provides a basis for assessment of the fidelity and quality of the implementation and identification of the contextual factors.

We conclude that valuable steps in healthcare development can be made by evaluation of the experience gained from pragmatic innovation and implementation projects which, through their complexity and adaptation, defy study by trial. This process can also help to identify areas that require further research. Because this method was developed retrospectively, we aim to test whether this method will help to plan an implementation project in advance.

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APPENDIX 1: NARRATIVE DESCRIPTION OF THE MOVIT PROJECT

Background

The MOVIT project was performed in 2009-2013 within the framework of the National Program for Elderly Care (NPO) in the Netherlands. [26] This program was a national initiative to develop care that is better suited to the individual needs of older people with complex care needs. It was aimed at achieving this by stimulating the setting-up of regional networks performing projects and experiments. The MOVIT project was initiated in the region South Holland-north with the aim of developing a strategy for the implementation of improved integrated care for older persons, with maximal adoption, penetration and sustainability throughout the entire region.

It was decided to focus on older persons living in residential care homes as they formed an already defined group with care needs in multiple life domains (somatic, functional, social, psychological) served by primary care providers in the same way as older persons living (semi-) independently in the community.

Setting

The project area was the region of South Holland-north with 523,000 inhabitants in a predominantly urban setting. In this region, 43 residential care homes, clustered in 13 organizations, each provided care for a median of 68 older persons with complex problems. Housing and domestic and nursing care were provided by the homes and funded by a national system controlled by a regional office.

The medical care for older persons in residential homes is provided by general practitioners and costs are fully covered by the resident's medical insurance in a mixed capitation and fee-for-service system. In each home, an elderly care physician is available on a consultative basis and at least one community pharmacist provides pharmaceutical care.

Prior to the project, a small-scale pilot was performed, and semi-structured interviews were held with at least one principal governor or manager of each of the financial organizations, care home organizations and regional professional organizations. The function of these interviews was to make an inventory of positive and negative experiences, expectations and hopes concerning the aims and methods of the project. They also served to get an impression of the position each of the stakeholders held in the "care landscape" within the region. After this phase, there was still room to incorporate the findings in the project activities.

The interviews revealed that governors, managers and professionals considered that the quality and efficiency of the care for older persons in residential homes could be improved. It also showed that the concept of integrated care, based on the Chronic Care Model was widely accepted. [9, 10] Locally, attempts had been made to improve vari-

ous aspects of integrated care by individual providers. Although some attempts were regarded successful, not all expectations had been met. Frustration and recriminations were present. Shortcomings in policy, incentives and resources, motivation to change, professional capability and communication were reported as barriers to further implementation. These items, and lack of priority, were named as reasons why these improvements had remained only temporary and isolated.

Stakeholders

The main stakeholders were care financiers (health and care insurance), residential care home governors and managers, general practitioners, nursing staff, pharmacists, and elderly care physicians. The older persons and their informal caregivers were indirect stakeholders, represented in an advisory committee. The advisory committee was formed, consisting of representatives of the older persons and of the disciplines and organizations involved. The committee was informed and consulted at least twice a year and more frequently when required.

At the start of the project, 'kick-off' meetings were held within three sub-regions of the project region at which all the stakeholders including representatives of the older persons were present.

Project team

The project was led by a team based within the department of Public Health and Primary Care of the Leiden University Medical Center. The team combined professional, research, educational and implementation management expertise. The team members had numerous ties with the regional professional and healthcare communities.

Project strategy

The MOVIT project can be described as a complex, multifaceted and multi-level implementation, with elements of a Quality Improvement Collaborative. [27, 28,37] Besides being a characteristic of the project itself, complexity is also a characteristic of the system in which it is performed. [38] The strategy allowed flexibility in expanding and tailoring implementation activities in response to the obstacles encountered. The project team constantly monitored and adapted the implementation activities. The care providers were the primary target, at an individual and group level, and they were regarded as essential and knowledgeable in realizing integrated care.

Project activities

The primary activity of the project was the establishment of a local team of care providers (general practitioners, nursing staff, elderly care physician, and pharmacist) for each residential home. The project team was active in approaching and involving all

concerned parties. Once formed, each local team was encouraged to develop consensus on its first most important step towards integrated care improvement and to translate this into clinical improvement plans. Local teams were allowed considerable freedom in their choice and level of improvement plans based on the local situation and needs.

Within the target region, 29 local teams were started. These were coached individually by trained general practitioners and offered inter disciplinary regional educational meetings. Clinical guidelines were developed and presented. Topics were: geriatric assessment, patient-based interdisciplinary meetings, medication management and distribution, wound treatment and advanced care planning. For each topic, theoretical and practical aspects (logistics and role/task coordination) were addressed. Successful activities of the individual teams were shared, thus stimulating 'cross-over' inspiration and regional consensus development.

The project team kept managers and governors of the organizations, and policymakers of the financial and regulatory institutions, informed through periodic meetings of the advisory committee. The project team took the initiative in developing financial constructions, for participating professionals and organizations, with the financial and regulatory bodies within national frameworks.

Progress

In the target region, the governors and managers of 42 of the 43 residential homes committed themselves to participate in the MOVIT project: 29 local teams were formed serving 33 residential homes. A total of 160 local team meetings were coached. Representatives from the management of the residential homes and all disciplines of the providers took part in a total of 10 regional educational meetings. At the end of the project 28 teams serving 32 homes were active (one home had been closed). Two more teams serving two homes started after the end of the project. The most influential financier continued the developed financial support after the end of the project. The educational meetings were continued.

Parallel to the implementation a study was made of the characteristics and experiences of the involved older persons, their informal caregivers and the various professional caregivers. Interviews were performed at baseline and after at least twelve months. These results will be reported separately.

After the project support in the care homes was concluded, the project team was approached by various parties (a care financier, local teams of providers and an association of residents of a housing project) with a request to translate the MOVIT project to the situation of community dwelling older persons with combined care needs. In response to these requests the concept was adapted to the community dwelling situation and broadened to include welfare professionals, patient representatives and multiple providers within individual sectors.

With a limited extension of the project funding four community-based pilots were started and a project plan was designed for the regional translation of the MOVIT concept to the community situation. Despite the cooperation of a national fund and the dominant local care financier (care insurance) insufficient support was found among the governors and managers of regional care organizations and councils and attempts to continue the project had to be abandoned. Since then government policy has caused more older persons with combined care needs to live independently and decreased the role of residential care homes. Councils and care providers are struggling to integrate medical, welfare and domestic care.

Appendix 2: 'Effective Practice and Organization of Care (EPOC) taxonomy financial arrangements and implementation strategies' fitting the MOVIT project components and objectives.

Financial Arrangements
Changes in how funds are collected, insurance schemes, how services are purchased, and the use of targeted financial incentives or disincentives

Category: Mechanisms for the payment of health services

	Subcategory	Definition	MOVIT component	Component objective
A	Method of paying healthcare organizations	Global budgets, employer based insurance schemes, line-item budgets; case-based reimbursement; pay for performance; mixed payment	Project team: developing financial constructions with financial and regulatory bodies within national frameworks.	Enabling participation of organizations and their employees in the project and sustaining their cooperation and care improvements after the project.
B	Payment methods for health workers	Fee-for-services, capitation, salary	Project team: developing financial constructions with financial and regulatory bodies within national frameworks.	Enabling participation of self-employed health workers in the project and sustaining their cooperation and care improvements after the project.

Implementation Strategies
Interventions designed to bring about changes in healthcare organizations, the behavior of healthcare professionals or the use of health services by healthcare recipients

Category: Interventions targeted at healthcare workers

	Subcategory	Definition	MOVIT component	Component objective
C	Educational meetings	Courses, workshops, conferences or other educational meetings	Regional educational meetings	Knowledge improvement, experience exchange, inter-disciplinary interaction, inspiration and motivation, consensus development.

D	Educational outreach visits, or academic detailing.	Personal visits by a trained person to health workers in their own settings, to provide information with the aim of changing practice.	Coached local team meetings.	Team formation. Awareness and knowledge improvement. Translation of general theory to the local situation. Improved care organization.
E	Clinical Practice Guidelines	Clinical guidelines are systematically developed statements to assist healthcare providers and patients to decide on appropriate health care for specific clinical circumstances.	Regional educational meetings and related guideline development by the project team.	Combining geriatric knowledge and practical experience in regional consensus guidelines and instruments. Development of a sustainable improvement cycle.
F	Inter-professional education	Continuing education for health professionals that involves more than one profession in joint, interactive learning	Coached local team meetings. Regional educational meetings.	Consensus and improved cooperation through a common knowledge base and awareness of respective professional competencies and limitations.
G	Local consensus processes	Formal or informal local consensus processes, for example agreeing a clinical protocol to manage a patient group, adapting a guideline for a local health system or promoting the implementation of guidelines.	Coached local team meetings, Regional educational meetings, facilitated clinical improvement plans of local teams.	More uniformly and optimized delivery of integrated geriatric care within the local possibilities.

Appendix 3: 'Effective Practice and Organization of Care (EPOC) taxonomy delivery arrangements' identified in the MOVIT project, with the related project components and objectives.

Delivery Arrangements
Changes in how, when and where healthcare is organized and delivered, and who delivers healthcare.

Category: Who provides care and how the healthcare workforce is managed

	Subcategory	Definition	MOVIT component	Component objective
H	Role expansion or task shifting	Expanding tasks undertaken by a cadre of health workers or shifting tasks from one cadre to another, to include tasks not previously part of their scope of practice.	Coached local interdisciplinary team meetings, facilitated clinical improvement plans of local teams, regional educational meetings.	Improved use of available competencies and manpower. Decreased frustration from indistinct task assignation.

Category: Coordination of care and management of care processes

	Subcategory	Definition	MOVIT activity	MOVIT objective
I	Communication between providers	Systems or strategies for improving the communication between health care providers.	Coached local interdisciplinary team meetings, support for clinical improvement plans of local teams, regional educational meetings.	Establishing and facilitating communication round daily topics and developing an improvement dialogue.
J	Comprehensive geriatric assessment	A multidimensional interdisciplinary diagnostic process focused on determining a frail older person's medical, psychological and functional capability to ensure that problems are identified, quantified and managed appropriately	Coached local interdisciplinary team meetings, support for clinical improvement plans of local teams, regional educational meetings.	Comprehensive geriatric assessment presented as a practical ideal which can be attained via various routes and steps.

K	Shared care	Continuing collaborative clinical care between primary and specialist care physicians	Coached local interdisciplinary team meetings, Regional educational meetings, support for clinical improvement plans of local teams	Pharmacist, elderly care physician and general practitioner involved in organization improvement and case-related care.
L	Teams	Creating and delivering care through a multidisciplinary team of healthcare workers.	Coached local interdisciplinary team meetings, support for clinical improvement plans of local teams, regional educational meetings.	Establishing a team with organizational status and capability based on common case related relevance and effectivity.

Chapter 7

Discussion

In recent decades, the medical care for older persons with multiple problems in the domains of somatic, functional, psychological and social functioning has become more of an organizational challenge. Increasing numbers of older persons living independently with an increased load of chronic diseases and ailments, and a care landscape with more numerous and specialized professionals against a background of financial restrictions, has given rise to new care concepts. The concepts 'integrated', 'value-based', 'multidisciplinary' and 'person-centered' have together formed a new paradigm. The overall challenge is to organize efficient integrated care on the one hand and, on the other, to ensure value for the individual older person. Patient satisfaction can be seen as a representation of this value. Patient satisfaction can be simply defined as 'an evaluation based on the fulfillment of expectations'. However, this definition only partly reflects the realization of these expectations, i.e. it also includes patient and provider characteristics, such as age and gender. In addition, it is influenced more by communicative provider skills than by care quality. (1-5) Despite reservations regarding the precise meaning of patient satisfaction, it is argued that only the patient can determine whether his/her needs and expectations have been met. (6, 7) Therefore, there is wide support for the relevance of patient satisfaction in the design and delivery of integrated care. (8-10)

The overall aim of this thesis is to provide an evidence-based proposal for incorporation of the opinions and values of older patients in the innovation of their care, by investigating patient satisfaction as an influencing factor in the innovation and implementation of integrated care. By summarizing and discussing the main findings of the previous chapters, this chapter addresses the challenge of using patient satisfaction to tailor care for older persons to fit their expectations and values and to implement this in our changing world. Supporting the title of this thesis: *'Patient satisfaction in integrated care for older persons. Towards care with personal value'* implies, ultimately, proposing practical applications for the use of patient satisfaction in the innovation of daily care.

MAIN FINDINGS

The study described in **Chapter 2** aimed at a better understanding of the seemingly contradictory finding reported by others, that increasing age is related to higher patient satisfaction while the age-related increase in morbidity is related to lower patient satisfaction. The conclusion of our study is that, in this population of older persons, satisfaction with the GP and practice does not increase with age. However, dissatisfaction with the GP practice is strongly related to the rising levels of complexity of health problems, independent of age and demographic and/or clinical parameters. The complexity of health problems is quantified using the patient's response to questions about perceived problems in the domains of somatic, functional, psychological and social functioning.

When exploring the association between the number of problem domains and the level of satisfaction, the expressed dissatisfaction showed more variation than satisfaction. Interestingly, there is a higher level of satisfaction in the group with zero problem domains. This level decreases with increasing complexity and gradually transforms into a predominance of dissatisfaction in the group with four or more problem domains.

This suggests that the positive relation between increasing age and satisfaction, as reported by other authors, may only hold true for populations with a low complexity of health problems. Implications related to our findings are: i) that when investigating the relation between individual patient characteristics and satisfaction, the complexity of health problems of older persons must be taken into account; ii) when the complexity load is greatest and, therefore, the demands on the healthcare system are largest, overall patient satisfaction will be influenced negatively; this effect should be taken into account when using patient satisfaction to evaluate care organization and delivery; and iii) dissatisfaction is a relatively infrequent but meaningful indication of the level of satisfaction.

The study in Chapter 2 does not answer the question whether the decreased satisfaction level with a higher complexity of health problems is related more to the health status of the patients themselves, or to the failure of the provided care to meet the expectations and needs of this group of patients. Therefore **Chapter 3** (also using ISCOPE data) addresses this question by investigating changes in patient satisfaction during implementation of integrated and patient-centered care, in relation to their perceived health state. In this population of older patients with a high level of complexity of health problems, the satisfaction level did not change after implementing patient-centered integrated care. During the implementation, no additional influence of the level of the perceived health status was found. Therefore, this study demonstrates that the perceived health state in itself does not modify patient satisfaction. The implication is that the decreasing level of patient satisfaction with increasing complexity of health problems, as reported earlier by others, is more likely to be an indication of a discrepancy between patient-need versus care organization than a result of a negative state of the mind and body of the patients.

The study in **Chapter 4** takes a closer look at modifiable factors in the GP-patient relationship that can influence patient satisfaction. In MOVIT (an integrated-care implementation project in care homes), a better GP-patient relationship, as perceived by the patient, is shown to be related to higher patient satisfaction among older patients. For example, a polite and kind GP scores well and is considered by older patients to be very important for the GP-patient relationship. In contrast, understanding the personal situation and paying attention to the older patient as an individual by the GP leaves room for higher satisfaction scores. The implication is, therefore, that all these potentially

modifiable aspects deserve particular attention from GPs in maintaining and possibly improving patient satisfaction.

The study in **Chapter 5** focuses on satisfaction during the process of implementing integrated care in the MOVIT project. The aim of this study was to investigate the changes in satisfaction with regard to aspects of integrated care among older patients and GPs, during regional implementation of integrated care in residential care homes. General satisfaction with the care received and provided does not show any relevant changes among older patients and GPs. However, satisfaction with specific aspects of integrated care does change, showing an emphasis on interpersonal aspects in older patients and organizational aspects in GPs. Interestingly, a measure to improve efficiency and safety (e.g. delegating tasks in medication logistics to nurses) decreased the satisfaction scores among older patients and increased satisfaction among GPs. The practical implications are that, if possible, the choice and nature of the changes should be tailored to accommodate the expectations and preferences of the specific groups affected. Proactively explaining what effects can be expected from particular changes, and why a tradeoff might be needed between aspects considered more important by one group than another, might avoid a negative effect on implementation. These process steps are particularly important when negative effects on satisfaction are expected for a specific group from a change which is, nevertheless, considered worthwhile.

In **Chapter 6** the focus shifts toward the process of implementation and patient satisfaction from an explicit to an implicit subject. A description is given how, retrospectively, a matrix was developed to capture and analyze the process of a pragmatic real-life integrated care implementation project. As in the previous study (Chapter 5), the MOVIT project was used. The matrix provides a basis for analysis of the identification and implementation of relevant factors. It shows that the main target of the implementation was the cooperation of professionals at both the individual and group level. However, the resulting changes had a much broader impact on the patients as a group and on individuals. The narrative revealed that: the professionals and location managers directly concerned with the delivery of care adopted the MOVIT approach, while the governors and general managers showed a reluctance to commit to further implementation. This observation suggests that the overall implementation strategy has failed to bridge the gap between professional motivation and adoption by the organization.

When using the matrix to visualize the levels and domains targeted and affected by the MOVIT implementation, the absence of planned interventions versus the presence of effects of the implementation in the 'patient domain' is striking. Therefore, although not a pre-specified topic in this study, patient satisfaction as a potential instrument in the involvement of the patient's perspective, at all levels of implementation, becomes apparent and the question arises whether its use might have helped to bridge the gap in adoption.

Key findings

1. In older persons, the level of patient satisfaction is lower in persons with a higher complexity of health problems, independently of age.
2. This inverse relation between patient satisfaction levels and complexity of health problems is related more to a discrepancy in patient need versus care organization, than to a negative state of the patient's mind and body.
3. Communicative aspects of the GP's behavior are related to patient satisfaction and are potentially modifiable.
4. While general satisfaction with the care received and provided may not change among patients and GPs, specific aspects can change and show different values.
5. In a multi-level and domain-implementation strategy, patient satisfaction can be used as an instrument for patient involvement at various levels.

Patient satisfaction in daily practice

Between 1987 and 2018, the changes in the care situation for the older couple, Mr and Mrs P. (introduced in the first chapter of this thesis) illustrate the changing role of patient satisfaction in daily practice.

In 1987, at the individual level, the content of care was determined by an implicit form of shared decision-making and based on the locally available resources and personal interactions between patient, professionals and informal caregivers. The care package was composed of (more or less) coordinated mono-professional care by the GP and community nurse, together with voluntary contributions from family and community. Financing was either a simple fee-for-service settlement between GP and patient, or a capitation fee paid to the GP by the medical insurance company (*Ziekenfonds*). Costs of the nurse were covered by membership of a church-related nursing organization (*Kruis vereniging*). Expectations were clear on both sides, since the roles of both the patient and the professionals were stable and mutually accepted. Patient satisfaction was neither an explicit determinant nor an outcome of care organization.

The situation of the same older couple in 2018 is much more complicated. The individual patient interacts with multiple professionals and shared decision-making has become an explicit tool. Primary care has become horizontally integrated, implying that various professional and informal caregivers cooperate to provide a comprehensive care arrangement. (11,12) Specialist medical care has become vertically integrated, implying that various professionals provide separate components of the diagnosis-based care chain. (11,12) In the Netherlands, financing is a mixture of out-of-pocket, fee-for-service, and capitation provided by the patient and the insurance organization (*Zorgverzekeringswe*t), the local council (*Wet Maatschappelijke Ondersteuning*) and the government (*Wet Langdurige Zorg*). (13) Society, professions and care organizations are constantly in transition. In healthcare, this transition is guided by concepts such as 'patient centered-

ness', 'value-based care' and 'triple aim'. (6,14,15) These concepts have in common that the patient is accorded an important position, as is his/her perception of the value and quality of the provided care. Patient satisfaction is widely used to evaluate value and quality in care innovation initiatives. (16,17) This provides patient satisfaction with a formal and practical status from the individual up to the policy level.

Patient satisfaction in care innovation

In 2018, integrated care in the Netherlands is provided by multiple professionals, working in various organizations, within a context of legal and financial structures. Part of the financial and legal structures are nationally applicable, others vary regionally. All the named professional, organizational and contextual factors change intermittently, influencing each other. Top-down political policy changes, financial and legal regulations comply, and professionals and organizations adapt. Bottom-up, consumer expectations and professional consensus develop, influencing organizational change and, eventually, policy.

In terms of implementation science, this can be seen as a Complex Adaptive System (CAS). (18) Innovating care in such a system means deliberately planning changes in health care with an intended outcome by applying interventions and influencing context factors. (19) The process of such an innovation is adaptive, implying that it is shaped by the behaviors and actions of participants while interventions and context are flexible and influence each other. (20) Within such an adaptive process, patient satisfaction expresses the perceptions of an essential group of participants and can, therefore, be seen as behavior influencing both process and outcomes.

Interpreting patient satisfaction

Patient satisfaction is related to expectations (21). To understand satisfaction responses, the closely related concept of 'expectations' needs to be considered. Particularly relevant findings for the interpretation of satisfaction in older patients are the following: i) older patients do not have explicitly formed expectations concerning the technical and logistic aspects of care; the expectations they do have largely concern the conduct of caregivers (22, 23), ii) expectations can change as the care is experienced; these expectations are influenced by feelings such as gratitude and ideas of equity (21), and iii) satisfaction is sometimes distinguished from care experiences, such as waiting time.

Although care experiences can be regarded as more objective than satisfaction, even these are influenced by expectations. (24) For example, the perception of waiting time can (like satisfaction) be influenced by characteristics of the patient, caregiver, health and environment, as well as by ideas of what is to be expected. (25) Statistically one study shows that only 4.6% of the variance of patient satisfaction is caused by characteristics of the care process itself and, particularly in older patients, the levels of satisfaction are

uniformly high. (5,26,27) Further qualitative investigation has shown that as a response to a question regarding satisfaction, both 'neutral' and 'satisfied' have been found to mean (more or less) 'as may be expected'. 'Very satisfied' means 'better than expected'. Dissatisfaction is rare but is not awarded lightly and is, therefore, highly relevant. (28)

Therefore, it can be concluded that satisfaction requires cautious interpretation as a quality indicator; however, the expression 'very satisfied' is an indication of superior care while each response of 'very dissatisfied' warrants individual qualitative investigation as being a possible indication of care failure.

Levels in patient satisfaction in care innovation

It has already been stated that at **the individual level** shared decision-making between the older patient and caregiver is an important approach to ensure that the individual patient's care meets his/her needs and wishes. There are numerous statements of individuals and authorities confirming the importance of engaging patients and evidence to support this standpoint. (6,8,9,15) Based on the same principles, but applicable at the **group and policy level**, patient engagement is a promising approach. (28-32) Engagement has been broadly conceptualized as: 'Patients, families, their representatives, and health professionals working in active partnership at various levels and across the healthcare system - direct care, organizational design and governance, and policymaking – to improve health and health care'. (32) Although client representation is already commonplace and compulsory by law in medical institutions (like hospitals and nursing homes) and even anchored in the Declaration of Human Rights, it is still rare and not even compulsory in primary care. (33) Even when in place, patient engagement still has a low level of influence in shaping care organization, leaving a lot of room for future development. (28)

TOWARDS CARE WITH PERSONAL VALUE

By combining the findings of the studies in this thesis and the theoretical perspectives on implementation and patient satisfaction, answers can be proposed to the central question: How can patient satisfaction be used to tailor care for older persons to fit their expectations and values, and implement this in our changing world?

Our research shows that quantitative representation of older patient's satisfaction about their GP provides information which can be used to steer care innovation and implementation. This has to be done with caution since the general level of satisfaction is lower when the complexity of problems is higher. This inverse relation seems more related to the fit of the provided care than to the mood of the patient. Patients' responses regarding satisfaction, reflect specific organizational details and affective

aspects of the GP-patient relationship which offer room for improvement. Analysis of a real-life integrated care implementation project highlights the domain in the strategy into which patient perspectives can be placed at all levels, from individual level up to policy level.

However, we also encounter difficulties in interpreting satisfaction responses. For example, the predominance of the 'satisfied option' which statistically overshadows the particularly relevant 'dissatisfied' and 'very satisfied' options. The mystifying result of what we assume to be the effect of changing expectations of patients during care innovation. Examples of this phenomenon are the decreasing satisfaction about the GP on increasing the role of the nurse in medication logistics and the greater satisfaction decrease in the group receiving more intensive integrated care than in the group receiving usual care.

Placing these findings concerning patient satisfaction in the context of patient engagement in general, shows the limitations of quantitative patient satisfaction use only. This leads us to the conclusion that it is useful in pinpointing aspects of care requiring specific attention but cannot stand alone without more qualitative details. Similarly, we conclude that satisfaction analysis (quantitative and qualitative) can support, but not replace, patient engagement.

Combining levels of patient satisfaction

To illustrate the combination of ingredients which can be used to tailor both the daily integrated care and innovating care organization to the individual values of older patients in a continually changing world, the analogy of a 'cupcake' is used in the following paragraph. Cupcakes have a wholesome cake base, a distinctive colorful sweet icing and a finishing touch, such as a cherry, which makes them complete.

The base

The wholesome base of integrated care, as it always has been, is the personal process of care and shared decision-making. Even in a new organizational setting of multiple disciplines and providers, the responses of patients emphasize the value of this personal interaction. Our research shows the value that patients attach to the personal conduct of their GP and that this can conflict with organizational changes, even when these are considered to be organizational improvements. Certain aspects of GP conduct related to the patient perceived 'GP-patient relationship' can be singled out. Likewise, particular organizational changes can be predicted to negatively influence this relationship, such as delegating GP tasks to supporting staff. We propose that, both in daily practice and in innovating care, particular attention should be paid to this aspect. In practical terms, this means training all caregivers to be aware of this patient value and ensuring that it is

clear to the patient and to the caregiver who can be approached regarding this personal aspect. When trade-offs have to be made in the choice between predictable positive or negative value options in the interest of, e.g., organizational efficiency, this value has to be taken into consideration and, if necessary, explained to the patient. Future, particularly qualitative, research could investigate the effect of adapting GP conduct and tasks in integrated care to patients' expectations regarding patient satisfaction and care outcomes. Attention could specifically be paid to in-depth understanding of the meaning of negative satisfaction responses. The consequences of this for GP training programs also require further investigation.

The icing

Distinctive icing on the cupcake represents the use of systematically collected satisfaction responses. When first planning an innovation of integrated care for older persons, existing evidence on patient satisfaction (e.g. complexity level and expectations) can be used to design the innovated care. Once started, patient satisfaction responses can be collected and used to tailor and evaluate the innovation process. 'Tailoring' means using patient satisfaction as an instrument in the adaptive innovation and implementation process. This implies that satisfaction evaluation should be available during the implementation process and facilitate the choice to either adapt care innovations or to more adequately explain aspects to participants if required. When evaluating the innovation, patient satisfaction responses can be seen as a measure of the success of the tailoring of the care to the values of the older persons.

More experience and research are required in collecting patient responses and strategically applying them during an adaptive implementation process. This could be combined with examining the value of the proactive use of the matrix described in Chapter 6.

The cherry

Making the cupcake complete, the cherry represents the process of engaging and empowering individuals, families and communities to be more active participants in healthcare planning and governance. Although this can be seen as a basic ethical necessity if the goal really is patient-centered care, evidence is still being sought to demonstrate that patient engagement does indeed have an impact. (29,33) The fact that this has not yet been established: '*… does not indicate an absence of impact; rather it indicates inadequate reporting with a lack of valid and reliable tools to capture the impact*'. (30)

In 2010, 40% of the general practices in the UK had patient participation groups (PPGs). The general practice contract of 2015 requires all general practices to establish PPGs.

(31) The activities of PPGs can range from consultation (least engaged) to partnership and shared leadership (most engaged). In the Netherlands, the engagement of older persons in research and care development was a priority of the National Care for the Elderly Program and still is of its successor, the '*Beter Oud*' program. (34) It has also been applied in an optional framework in numerous local care projects; however, in contrast to the UK, there is no formal obligation in Dutch general practice. (35)

The MOVIT and ISCOPE projects provided additional experience regarding the engagement of older persons. It seems warranted to further develop this experience and study the impact of engagement at all levels of implementation, from the individual patient to the policy level.

Application in practice

The GP practice of Mr and Mrs P. continues to strive towards improvement of their care for their older patients. The collective ambition of the staff is to provide state-of-the-art care and be at the forefront of relevant medical and societal developments. They are actively involved in the training of all their professionals and have a close working relationship with the primary care department of a nearby academic institute. Care improvement and innovation projects are performed within the practice and, when possible, they also take part in regional initiatives and research projects.

Mr P. is satisfied with the GP practice. The GPs, nurses and assistants work hard and, compared with family and friends elsewhere, he thinks that his practice offers enough services so that he and his wife rarely have to visit a hospital. However, they find that they do see many staff members and are not always sure who to discuss some of their personal issues with. At regular intervals, they are asked to evaluate aspects of the service of their GP practice by filling in a questionnaire. Mr P. once used the open space in a questionnaire to complain about the terse reaction his wife had received from a staff member when she had forgotten an appointment. Shortly after venting his complaint, he was visited by one of the senior GPs and they had had a very satisfying personal talk. The GP had explained that the reaction of the staff member was not personal but was related to the way the practice had delegated various tasks and responsibilities. He promised to discuss organizing things differently during a staff meeting, but without personally criticizing that particular staff member. Mr P. is not sure whether anything has actually changed, but he thinks it might have because he also mentioned the matter to his fellow card club member who sits in a patient participation committee of the practice.

Overall considerations

The underlying question of this thesis about the use of patient satisfaction to tailor innovation of care for older persons to fit their expectations and values arose when the MOVIT project group was impressed by the role that patient satisfaction could play - when given the opportunity. The MOVIT project offered the flexibility to expand, test and study the role of older persons in implementing integrated care and the ISCOPE study offered the volume and data to investigate specific aspects relevant when interpreting satisfaction responses.

Combining theory and practice

The underlying question means addressing the theory of at least the three inter-related major concepts: patient satisfaction, integrated care and implementation. In science, the concepts patient satisfaction, integrated care and implementation each have a considerable body of theory and evidence in their own right. Keeping the practical underlying question of this thesis in mind, theory and evidence has been cited as required. In the first chapter, a brief theoretical introduction is given of each of the three concepts and expanded on (as needed) in the subsequent chapters. The challenge of this thesis is to combine contributions to the in-depth knowledge of these individual concepts with their combined application in the day-to-day, patient-centered improvement (organization) of care. By focusing on this combined contribution, the key findings of our studies show that even the quantitative representation of patient satisfaction can reflect the patient needs and preferences which can be incorporated in a care improvement initiative. By translating the results to a proposal for practice, we hope to have strengthened the case for a role for patient satisfaction which goes further than an 'audit tool', by directly supporting patients in their engagement in the design and implementation of care.

Focus on the GP

The presented studies focus on the role of the GP as one of the main care providers in integrated primary care for older persons. While our focus on the GP reflects the prominent role the GP plays in the eyes of older persons, other professionals (e.g. nursing staff, elderly care physicians, pharmacists) are equally important in the ISCOPE and MOVIT projects. This was particularly the case in the inter-professional working groups of the MOVIT project (see the narrative description of the MOVIT project in Chapter 6). Although some of the patient responses were specifically examined in relation to the GP, we also see them as an example for the role of the professional care provider in general. Also, we regard the satisfaction of patients about the role of their GP in integrated care as relevant to the whole of integrated care. It is important to establish whether the findings concerning the GP also apply to other healthcare providers.

Aspects of Integrated care

Integrated care is: 'The management and delivery of health services so that clients receive a continuum of preventive and curative services, according to their needs over time and across different levels of the health system'. (12) To provide integrated care both the management and delivery aspects have to be addressed. These two different aspects of integrated care for older persons in primary care are presented in this thesis: i) as an organizational aspect the MOVIT project presents teams of GPs, elderly care physicians, pharmacists and nursing staff, defining and developing steps on their own route towards organization of improved integrated care in residential care homes; and ii) as a delivery aspect the ISCOPE study presents the training of GPs and practice nurses in formulating and carrying out care plans together with individual community dwelling older persons with complex care needs (Chapter 2 and 3).

These two operationalizations represent the different, but partly overlapping, aspects in integrated care. They differ in that care plans (ISCOPE) are a basic tool in providing integrated care and an inter-professional cooperation in a team (MOVIT) is a requirement in organizing integrated care. They overlap in the fact that a common goal in developing integrated care of (MOVIT) teams is to enable and perform care plans and that, in order to perform care plans, inter-professional cooperation is necessary.

Changes in organization of care

At the time of the performance of the ISCOPE and MOVIT projects (2008-2013), there was no fundamental difference between medical care for older persons with complex care needs inside and outside residential care homes. In both cases the GP was the central professional and patient-centered care plans, and developing and organizing inter-professional cooperation were common themes. Since 2013, traditional residential care homes as a form of sheltered living for older persons have almost disappeared in the Netherlands; most older persons are now living in the community independently in newly appearing forms of sheltered living, or are admitted to nursing homes when they have severe care needs. The elderly care physician is starting to play a more prominent role in the medical care for community-dwelling older persons than was previously the case in the residential care homes. Welfare support is increasingly recognized as an important contribution to integrated care, and forms of integrating medical care and welfare support are being developed. Patient-centered care plans and inter-professional care development remain important ingredients of integrated care in the current community-based situation with a more important role for the elderly care physician and welfare support. We have tested this conclusion in applying the 'MOVIT approach' in a number of pilots in the community with the added elements of active engagement of older persons and welfare workers (MOVIT-XM). These pilots have not yet been evaluated and fall outside the scope of this thesis.

Research methods

Sitzia and Wood warned against the tendency to use satisfaction as an audit tool, in which large-scale surveys appear to be the most effective approach. (3) Since the reality is that, in real-life implementation, quantitative satisfaction audits are still widely used as outcome, we have chosen to investigate this phenomenon quantitatively in four of the five studies presented in this thesis. However, the theoretical context in which they are placed is, to a large degree, qualitative. It is also clear that in order to understand the meaning of, particularly patient (dis)satisfaction, the voice of the individual patient needs to be heard and explored. In research terms this means that qualitative methods are needed. In practical terms, we have stressed the importance of the voice of the patient in shared decision-making at the individual level, and patient involvement at the organization and policy levels.

Ongoing activities

We regard the absence of qualitative research as a limitation of the present work, which we have started to remedy as part of our ongoing activities by using a wider range of research methods. Based on the studies and results presented in this thesis, our research group has outlined new studies to further examine the background and mechanisms related to the satisfaction of older persons with their GP.

Our first ongoing study is dedicated to community-dwelling older persons who experience hindering health complaints that disturb daily activities. If GPs are unaware of such complaints, this could lead to a mismatch in expectations, provided care, and low satisfaction. To investigate how older persons experience hindering health complaints, how they deal with them, and what they expect from their GP, we are currently performing a qualitative study. Community-dwelling older persons (aged ≥80 years) with pain and/or problems with walking/standing according to a written screening questionnaire were invited to participate in a (group) interview about hindering health problems and their expectations from the general practice and GP. The qualitative analyses using the framework method are currently in progress.

In parallel to this study with older participants, we are also performing a qualitative study with GPs as participants. The main question of this study is how GPs can improve integrated primary care for older persons, with special attention paid to hindering complaints in daily life. The findings from the focus groups with older persons are introduced and explained in these focus groups with GPs to fuel the qualitative discussions on innovation possibilities to improve primary care.

Combining the qualitative results of those two studies will provide further insight into the needs, expectations, and experiences of older persons in primary care and the possibilities of GPs to responds to these.

Based on the 2017 standpoint of the Dutch College of General Practitioners for elderly care, we are currently developing a self-evaluation instrument for GPs which they can use to compare their own perception of their performance on the various dimensions of integrated care for older persons with the perceptions of their patients. (36) This instrument was developed to specifically measure patient satisfaction and is intended to help GPs recognize possible gaps between their own perceptions and those of their patients and thereby prioritize patient-centered improvements in their care.

The future

There is broad consensus as to the desirability of patient centeredness and integration of care for older persons with complex care needs; however, both can be further improved. Continuing development of policy and practice in these directions is, therefore, a necessity. However, questions remain as to how to design and implement this integrated care in a way that best fits the wishes and needs of older persons.

In this thesis, we indicate how patient satisfaction can be used in our changing world to tailor care for older persons to fit their expectations and values. As these findings are based on evidence and systematically described experience, this thesis supports not only the relevance of patient satisfaction but also the feasibility of its use. While encouraging the use of patient satisfaction as a tool, we also need to warn all care providers about the reluctance of older persons to express dissatisfaction; this implies that we encourage them not to be complacent with a score of 7 out of 10 on a satisfaction scale, but to strive for at least a 9 out of 10 and to investigate any score lower than average on an individual basis.

Our research group recognize that inter-professional cooperation in integrated care for older persons in the community can be improved. We aim to contribute to this improvement by prioritizing this in the training of General Practitioners and Elderly Care Physicians. This means not only providing inter-professional training for these two groups of trainees, but also developing links with the training of medical specialists, nurses and social workers; our group is currently implementing initiatives to realize these goals. With an aim to collect further experience and evidence, an ideal situation could be a cooperation between older person representatives, research and teaching departments and clusters of GP practices so that care innovation, teaching, patient participation and research can be optimally combined.

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Chapter 8

Summary

Patient satisfaction in innovating integrated care for older persons

Medical care for older persons is changing. This change is reflected in daily practice, amongst others, through increasing numbers of older persons with multiple treatable chronic diseases. There is also a greater emphasis on quality of life, participation and comfort as ultimate goals of care, and no longer merely the absence of disease. This implies new roles and alliances for patients, professionals and informal caregivers.

As a consequence of an increasing trend for older persons to live in the community, these challenges of an ageing society will continue to be met mainly in primary care. There the general practitioner (GP) is still a central, but certainly not the only figure in the provision of care in the community. Meeting the present challenges is now a team effort. Other professionals are increasingly involved and the role of the informal caregivers are becoming formalized. The changed healthcare concept has been captured in the phrase 'person-centered, integrated care' and a paradigm shift has occurred from 'reacting as required' to 'proactive anticipation'.

As an overall measure for the success of the provided care, the concept of 'value' has now become widely used. This concept combines the achieved outcomes of care and the costs of providing them. As one of the determinants of possible outcomes of care, the personal values of individual patients influence the overall collective value. For older persons, particularly qualitative studies consistently show the same personal values, i.e. social relations, functional ability and activities, security and health status. However, inclusion of the personal values of the individual patient in the actual care received remains a vulnerable item.

Ensuring that an individual's specific health needs and desired health outcomes are the driving force behind all healthcare decisions and quality measurements is currently called 'patient-centered care'. When innovating care to meet present and future challenges, the individual and the collective values of patients must be incorporated.

Towards care with personal value

This thesis focuses on combining the process of innovating care practice and the values of the older persons involved, by investigating patient satisfaction as an expression of personal value, while innovating and implementing integrated primary care. The thesis ends by proposing a role for patient satisfaction of older persons in the innovation and implementation of integrated care, thereby addressing the question as to how patient satisfaction can help the innovation of strategies and processes towards 'care with personal value'.

Interacting concepts

The focus of this thesis is on the real-life process of innovating care for older persons living in the community. In this setting, the integration of care is particularly important

to older persons with complex health problems. Since 'person centredness' is a priority, patient satisfaction is a potential instrument and outcome in care innovation and implementation. This involves examining the interaction between the interacting concepts of *Integrated care, Patient satisfaction, Implementation,* and *Complex health problems*.

In this thesis, these concepts are applied according to the following definitions:

Integrated care is defined as: '*the management and delivery of health services so that clients receive a continuum of preventive and curative services, according to their needs over time and across different levels of the health system*'.

Patient satisfaction is defined as: *'an evaluation by the patient based on the fulfillment of expectations'.*

Implementation in the context of care innovation and research is defined as: *'methods to promote the systematic uptake of proven clinical treatments, practices, and organizational and management interventions into routine practice and, thereby, improve health'.*

Complex health problems are defined as: *'the accumulation and interaction of problems in multiple domains of i) somatic, ii) functional, iii) psychological and iv) social functioning'.*

The aim and findings of this thesis

The overall aim of this thesis is to provide an evidence-based proposal for the incorporation of the opinions and values of older persons in the innovation of their GP care, by investigating patient satisfaction as an influencing factor in the innovation and implementation of integrated care.

The thesis is based on two large research projects performed within the department of Public Health and Primary Care, as part of the National Program for Elderly Care in and around the city of Leiden between 2009 and 2013.

The first project, Integrated Systematic Care for Older PErsons (ISCOPE) was aimed at i) assessing in general practice the efficacy of a simple monitoring system for determination of the level of complexity of health problems of individual older persons, and ii) the composition and performance of a personalized care plan.

The second project, MOVIT (Medical care optimalization in care homes implementation project) was initiated with the aim to develop a strategy for the implementation of improved integrated care for older persons throughout the (Leiden) region.

The first four studies in this thesis contribute to the overall aim by investigating the relation between various aspects of patient satisfaction, and patient and GP characteristics, during the real-life implementation of integrated care for older persons in the community. The fifth study contributes by positioning patient satisfaction within the implementation strategy and process.

The study presented in **Chapter 2** investigates the relationship between satisfaction and patient characteristics in the ISCOPE study. The aim is to better understand the

seemingly contradictory findings reported by others, that 1) increasing age is related to higher patient satisfaction, while 2) the age-related increase in morbidity is related to lower patient satisfaction. The conclusion of our study is that, in this population of older persons, satisfaction with the GP and practice does not increase with age. However, dissatisfaction with the GP practice is strongly related to the rising level of complexity of health problems, independent of age and demographic and/or clinical parameters. The implications are: i) that when investigating the relation between individual patient characteristics and satisfaction, the complexity of health problems must be taken into account; ii) when the complexity load is greatest and, therefore, the demands on the healthcare system are heaviest, overall patient satisfaction will be influenced negatively; this effect should be taken into account when using patient satisfaction to evaluate care organization and delivery; and iii) dissatisfaction is a relatively infrequent but meaningful indication of the level of satisfaction.

The study presented in **Chapter 3** further explores the relation between the complexity of health problems and patient satisfaction in relation to the perceived health state of the older persons. The aim is to shed light on the question whether the decreased satisfaction level with a higher complexity of health problems (found in Chapter 2), is related more to the health status of the patients themselves, or to the failure of the provided care to meet the expectations and needs of these patients. This study (also using ISCOPE data) shows that the perceived health state in itself does not modify patient satisfaction. The implication is that the decreasing level of patient satisfaction with increasing complexity of health problems is more likely to be an indication of a discrepancy between patient need versus care organization, than a result of a negative state of the mind and body of the patients.

The study presented in **Chapter 4** investigates the doctor-patient relationship in the MOVIT study, as perceived by the older persons, and the role it plays in their level of satisfaction with the GP. A better GP-patient relationship, as perceived by the patient, is shown to be related to higher patient satisfaction. The participating GPs score well on being polite and kind, whereas understanding the personal situation and paying attention to the older patient as an individual show room for improvement. The implication is, therefore, that these potentially modifiable aspects deserve particular attention from GPs in maintaining and possibly improving patient satisfaction.

Chapter 5 examines the changes in perceptions of aspects of integrated care among older persons and GPs during the implementation of integrated care in the MOVIT project. Investigating these differences in parallel helps to highlight differences in values. While general satisfaction with the care received and provided does not show the need for any relevant changes among older patients and GPs during implementation, the satisfaction with specific aspects of integrated care does. For example, an emphasis was found on interpersonal aspects among older patients and organizational aspects

among GPs. The practical implications are that, if possible, the choice and nature of changes in care should be tailored to accommodate the expectations and preferences of the groups affected. Proactive explanations might be required when negative effects on satisfaction from a change in care are expected for one group, whereas the change is nevertheless considered worthwhile.

Chapter 6 focuses on the process of implementation. Retrospectively, a matrix was developed to capture and analyze the implementation process of the MOVIT project and to delineate a role for patient satisfaction. The matrix provides a tool for analysis of the implementation strategy and its relevant elements. It shows that the main target of the implementation was the cooperation of professionals while the resulting changes had a much broader impact on (amongst others) the patients as individuals and as a group. Therefore, although not a pre-specified topic in this study, patient satisfaction and involvement are highlighted and the possibility arises that their use could have helped the adoption and sustainability of the implementation of MOVIT.

Key findings

The key findings of this thesis are:

1. In older persons, the level of patient satisfaction is lower in persons with a higher complexity of health problems, irrespective of the individual's age.
2. This inverse relation between patient satisfaction levels and complexity of health problems is related more to a discrepancy in patient needs and care organization, than to a negative state of the patient's mind and body.
3. Communicative aspects of the GP's behavior are related to patient satisfaction and are potentially modifiable.
4. While overall general satisfaction with the care received and provided may not change among patients and GPs, specific aspects can change and can reveal different values.
5. In a multi-level and domain-implementation strategy, patient satisfaction can be used as an instrument for patient involvement at various levels.

Answering the question and proposing a solution

By combining the findings of the studies in this thesis and the theoretical perspectives on implementation and patient satisfaction, an answer can be proposed to the central question: How can patient satisfaction be used to tailor care for older persons to fit their expectations and values, and implement this in our changing world?

Firstly, we conclude that quantitative expressions of patient satisfaction provide relevant information about aspects of care provision and organisation which can be used in innovating care in the setting of integrated primary care for older persons. We also conclude that these expressions need to be interpreted and applied with caution

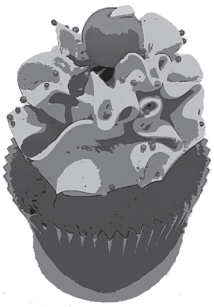
and that they provide only a partial picture of the expectations and values of patients and of how they are met. Qualitative and individual patient expressions are essential to complete the picture. We also conclude that patients need a clearly defined position in the implementation process in order to ensure that their expectations and values are expressed in the final care innovation.

As an answer to the question as to how patient satisfaction can be used to tailor care, we propose a layered approach based on shared decision-making between the individual patient and caregiver, augmented by regular and structured investigation of patient satisfaction, and topped off by structural patient engagement in care innovation and implementation.

We have visualized this layered approach using the analogy of a cupcake: with a base of shared decision-making, an icing of structured investigation of satisfaction, and a cherry of patient engagement.

Chapter 9

Samenvatting (Summary in Dutch)



Het is een algemene tendens dat ouderen langer in hun eigen omgeving blijven wonen. Hierdoor verandert ook de medische zorg die ouderen thuis via hun huisarts en de daaraan verbonden andere zorgverleners ontvangen (eerstelijns gezondheidszorg). Deze zorgverleners merken de veranderingen aan het toenemende aantal ouderen die ook vaker én meer ziekten en gezondheidsklachten hebben. Bij de verwachtingen van ouderen ten aanzien van de opbrengst van zorg, ligt er een grotere nadruk op kwaliteit van leven; dit betekent om mee te kunnen blijven doen aan het leven en zich prettig te voelen, meer dan alleen goed behandeld te worden voor ziekte. Voor de zorgverleners betekent dit dat hun aanpak tegelijkertijd gericht moet zijn op gezondheidsproblemen op geestelijk, sociaal en praktisch gebied naast die op lichamelijk gebied. Zorg-technisch betekent dit een nieuw concept, gekenmerkt door termen als; 'persoonsgericht, geïntegreerde zorg met een verschoven nadruk van 'reactief en curatief' naar 'proactief en preventief'. Dit betekent ook nieuwe rollen en samenwerkingsverbanden voor de zorgverleners, ouderen en hun partners, kinderen en andere mantelzorgers.

In de eerstelijns gezondheidszorg en ondersteuning is de huisarts nog steeds een centrale figuur. Maar de huisarts is niet meer de enige. Andere professionele zorgverleners, zoals bijvoorbeeld de specialist ouderengeneeskunde, worden steeds vaker bij de zorg betrokken en op de bijdrage van mantelzorgers wordt steeds meer gerekend. Het is nu een teaminspanning geworden om de uitdagingen in de eerstelijns ouderenzorg aan te gaan.

Als maat voor het succes van de geleverde zorg wordt door professionele zorgverleners en beleidsmakers het begrip 'waarde' ('value') steeds meer gebruikt. Hier wordt onder verstaan een combinatie van de opbrengsten en de kosten van de zorg. De persoonlijke waarden van patiënten bepalen deels de uiteindelijke 'waarde' van de zorg. Uit de reacties van ouderen blijkt dat vooral de volgende persoonlijke waarden belangrijk gevonden worden: sociale relaties, deelname aan activiteiten, veiligheid en lichamelijk welbevinden. Deze waarden zijn vaak nog onvoldoende merkbaar voor ouderen als prioriteit in de zorg die ze ontvangen. De zorg zou daarom meer persoonsgericht moeten zijn.

Onder 'persoonsgerichte zorg' wordt verstaan dat specifieke zorgbehoeften, wensen, en de voor het individu belangrijke opbrengsten een bepalende rol spelen bij alle zorgbeslissingen, en bij de beoordeling van de 'waarde' van de zorg. Bij het vernieuwen (innoveren) van zorg, om de huidige en toekomstige uitdagingen in de ouderenzorg het hoofd te bieden, zouden de persoonlijke en collectieve waarden van patiënten een meer bepalende rol moeten spelen.

Dit leidt tot de vraag die met dit proefschrift beantwoord wil worden: Hoe kan patiënt tevredenheid ingezet worden om de zorg voor oudere personen aan te passen aan hun verwachtingen en waarden, en toe te passen in de veranderende zorgwereld?

Op weg naar zorg met persoonlijke waarde

Dit proefschrift brengt de innovatie van dagelijkse eerstelijns ouderenzorg en de waarden van de betrokken oudere personen samen, door patiënttevredenheid als een uitdrukking van persoonlijke waarde te bestuderen. De uitkomsten van de verschillende studies zullen samenkomen in een voorstel hoe patiënttevredenheid een rol kan spelen in innovatiestrategieën en processen op weg naar 'zorg met persoonlijke waarde'.

Samenhangende begrippen

Aangezien de bedoeling is om met dit proefschrift bij te dragen aan praktische zorginnovatie voor ouderen komen meerdere, met elkaar samenhangende, begrippen aan de orde. In de vernieuwde zorg is afstemmen van zorg (geïntegreerde zorg) vooral van belang voor ouderen met meerdere gezondheidsvraagstukken in verschillende aspecten van het leven (complexe problematiek). Persoonsgerichtheid is belangrijk, en dus is de beleving van patiënten (patiënttevredenheid) een relevant middel voor de sturing van zorginnovatie en de beoordeling van het succes van de invoering (implementatie). Dit proefschrift bestudeert daarom de samenhang van deze verbonden begrippen: geïntegreerde zorg, patiënttevredenheid, implementatie en complexe gezondheidsproblematiek.

De volgende definities van deze begrippen worden gebruikt:

Geïntegreerde zorg: Een met veranderende individuele behoeften over de tijd rekening houdend, samenhangend aanbod van gezondheidszorgdiensten die een aaneengesloten geheel vormt en de verschillende soorten en niveaus van zorg overbrugt.

Patiënttevredenheid: Een oordeel van de patiënt over de zorg, gebaseerd op de tegemoetkoming aan zijn/haar verwachtingen van de zorg.

Implementatie, in zorginnovatie en onderzoek: Methoden ter bevordering van de toepassing van bewezen behandelingen, werkwijzen en organisatorische en management veranderingen in de dagelijkse praktijk ter bevordering van de gezondheid.

Complexe gezondheidsproblematiek: De opeenhoping van gezondheidsproblemen in meerdere van de gebieden van het leven: lichamelijk, praktisch, geestelijk en sociaal.

De bevindingen van dit proefschrift

Dit proefschrift is gebaseerd op twee grote onderzoeksprojecten die zijn uitgevoerd binnen de afdeling Public Health en Eerstelijnsgeneeskunde van het LUMC. De onderzoeksprojecten maakten deel uit van het Nationaal Programma Ouderenzorg, en zijn tussen 2009 en 2013 uitgevoerd in de regio Zuid-Holland Noord. De twee projecten zijn ISCOPE (Integrated Systematic Care for Older Persons) en MOVIT (Medische zorg Optimalisatie in Verzorgingshuizen Implementatie Traject).

Het ISCOPE project evalueerde in de huisartspraktijk de werking van een vragenlijst om het niveau van complexiteit van gezondheidsproblemen van oudere personen vast

te stellen. Gebruik makend hiervan werd daarna een persoonlijk zorgplan opgesteld voor de ouderen met een hoge mate van complexe gezondheidsproblemen, met als doel de hoogst haalbare kwaliteit van leven voor de oudere.

Het MOVIT project was gericht op het ontwikkelen en testen van een implementatiestrategie voor het verbeteren van de medische zorg in alle verzorgingshuizen in de regio Zuid-Holland Noord. Structurele en samenwerking tussen alle betrokken zorgverleners in het verzorgingshuis stond hierbij centraal.

Dit proefschrift beschrijft vijf onderzoeken, die allen bijdragen aan de algemene doelstelling. De eerste vier doen dit door de relatie te bestuderen tussen patiënt- en huisarts kenmerken, en patiënttevredenheid tijdens de implementatie van geïntegreerde eerstelijnszorg voor ouderen. Het vijfde onderzoek beschrijft het proces van implementatie van geïntegreerde eerstelijnszorg voor ouderen en de rol van patiënttevredenheid hierin.

Het in **Hoofdstuk 2** beschreven onderzoek kijkt naar de relatie tussen patiëntkenmerken en patiënttevredenheid in het ISCOPE project. Het doel van dit onderzoek is om de bevindingen uit eerdere onderzoeken, die elkaar tegen lijken te spreken, beter te begrijpen. Deze eerdere onderzoeken lieten namelijk zien dat; een toenemende leeftijd samen gaat met hogere patiënttevredenheid én dat het aan toenemende leeftijd gebonden grotere aantal ziekten samen gaat met lagere patiënttevredenheid.

Binnen de groep ISCOPE deelnemers blijkt dat de tevredenheid over de huisarts en de huisartspraktijk niet stijgt met een toenemende leeftijd van de patiënt. Maar de ontevredenheid neemt wel toe met meer complexiteit van gezondheidsproblemen. Dit is onafhankelijk van leeftijd, en andere patiëntkenmerken. Dit heeft een drietal praktische gevolgen. Allereerst; bij het onderzoeken van de relatie tussen tevredenheid en patiëntkenmerken, zoals leeftijd moet rekening gehouden worden met de complexiteit van gezondheidsproblemen. Ten tweede; als er veel ouderen met complexe gezondheidsproblemen zijn en het zorgsysteem dus onder druk staat zal de algemene patiënttevredenheid lager zijn. Hier moet rekening mee gehouden worden bij de beoordeling van zorgkwaliteit aan de hand van patiënttevredenheid. En als derde praktische gevolg; ontevredenheid bij patiënten is een relatief zeldzaam maar belangrijk signaal bij zorginnovatie.

Het onderzoek gepresenteerd in **Hoofdstuk 3** verkent de relatie tussen complexiteit van gezondheidsproblemen en patiënttevredenheid tegen de achtergrond van het welbevinden van ouderen. Het doel is om te verhelderen of het lagere niveau van patiënttevredenheid bij hogere probleem complexiteit, zoals gevonden in hoofdstuk 2, in verband staat met het welbevinden van de patiënten of in verband staat met de aard van de geboden zorg. Gebruikmakend van ISCOPE data laat dit onderzoek zien dat veranderingen in patiënttevredenheid over de zorg bij ouderen met een hoge probleem complexiteit tijdens de zorg verandering niet in verband staat met een minder welbevinden van de ouderen. Praktisch gevolg is dat patiënttevredenheid verandering

tijdens zorginnovatie in eerste instantie toegeschreven moet worden aan de zorg en pas in tweede instantie aan hoe zwaar de patiënten hun gezondheidsproblemen ervaren.

Het onderzoek beschreven in **Hoofdstuk 4** is gericht op de relatie tussen patiënttevredenheid en de door de patiënt ervaren bejegening door de huisarts. Voor dit onderzoek is gebruik gemaakt van gegevens uit het MOVIT project. Een hogere patiënttevredenheid blijkt samen te hangen met een door de patiënt als beter ervaren bejegening. Specifieke aspecten zoals 'beleefdheid' en 'vriendelijkheid' vinden patiënten belangrijk. Hierover zijn de oudere patiënten zeer tevreden. Echter, bij de aspecten 'aandacht voor de persoonlijke situatie' en 'de patiënt als individu' is er ruimte voor verbetering. Het praktische gevolg is dat deze, te verbeteren, aspecten aandacht verdienen van huisartsen bij het behouden, en zelfs verhogen van patiënttevredenheid.

In **Hoofdstuk 5** worden veranderingen in de beleving van specifieke aspecten van geïntegreerde zorg bij oudere personen en huisartsen bestudeerd gedurende de implementatie van zorginnovaties in het MOVIT project. Door het gelijktijdig bestuderen bij ouderen en huisartsen, kunnen veranderingen en verschillen in hun waarden vergeleken worden. Uit de resultaten blijkt dat de tevredenheid van ouderen en huisartsen over de zorg in zijn algemeenheid niet veranderen, terwijl dit over specifieke aspecten wel verandert. Bij ouderen ligt bij deze ervaren veranderingen de nadruk op omgangsaspecten en bij huisartsen op de organisatorische aspecten. Blijkbaar geldt hier een verschil aan waarden. Praktisch gevolg is dat met deze verschillende waarden rekening gehouden kan worden bij doorvoeren van veranderingen

In **Hoofdstuk 6** ligt de nadruk op de verschillende stappen van het implementatie proces. In dit hoofdstuk staat het MOVIT project centraal. Na afloop van dit project is een matrix ontwikkeld om het implementatieproces vast te leggen, te begrijpen, en een plaats voor patiënttevredenheid in het proces aan te wijzen. De ontwikkelde matrix is hierbij een middel om de plaats van de verschillende onderdelen van de totale strategie in het veranderproces te laten zien. Hieruit blijkt dat bij het MOVIT project het zwaartepunt is gelegd op de samenwerking van de zorgverleners, terwijl de gevolgen ook voelbaar waren voor patiënten als individuen en als groep. De patiënten waren bij de opzet van het project wel het doel, maar niet betrokken. Hieruit blijkt dat betrekken van patiënten, en gebruik van patiënttevredenheid, mogelijk een gunstig effect had kunnen hebben op het opnemen en behouden van de MOVIT implementatie.

Belangrijke bevindingen

De belangrijke bevindingen van dit proefschrift zijn:

1. Bij oudere personen is het niveau van patiënttevredenheid lager bij personen met een hogere complexiteit van gezondheidsproblemen, onafhankelijk van leeftijd.

2. Deze omgekeerde relatie tussen patiënttevredenheid en complexiteit van gezondheidsproblemen staat meer in verband met een verschil tussen zorgbehoefte en aanbod, dan met het welbevinden van de patiënten.
3. Bejegeningsaspecten van huisartsgedrag zijn gerelateerd aan patiënttevredenheid en zijn te verbeteren.
4. Terwijl algemene tevredenheid over veranderende zorg niet anders is bij patiënten en huisartsen, kan dit wel voor sommige aspecten gelden. Hieruit kunnen verschillen van waarden blijken.
5. Bij een zorg verander project laat een gestructureerde beschrijving zien waar patiënt betrokkenheid en -tevredenheid op meerdere manieren toegepast kan worden.

De vraag beantwoorden en een voorstel voor een aanpak

Door het samenvoegen van de uitkomsten van de onderzoeken in dit proefschrift met de kennis uit de literatuur over implementatie en patiënttevredenheid, kan een antwoord gegeven worden op de centrale vraag: Hoe kan patiënttevredenheid ingezet worden om de zorg voor oudere personen aan te passen aan hun verwachtingen en waarden, en toe te passen in de veranderende zorgwereld?

Ten eerste kan geconcludeerd worden dat onderzoek naar patiënttevredenheid informatie geeft over de geboden zorg en de organisatie daarvan, die bruikbaar is bij zorginnovatie. Ook kan geconcludeerd worden dat deze informatie voorzichtig geïnterpreteerd en toegepast moeten worden. Naast de getalsmatige onderzoeksuitkomsten moet ook letterlijk de stem van de patiënten gehoord worden. Een verdere conclusie is dat patiënten een duidelijke plaats in een veranderproces moeten hebben, om zeker te stellen dat hun verwachtingen en waarden tot uitdrukking komen in het uiteindelijke resultaat.

Als antwoord op de vraag hoe patiënttevredenheid toegepast kan worden in aanpassen van zorg, stellen wij een gelaagde benadering voor. Overeenstemming tussen individuele patiënt en zorgverlener op basis van gedeelde besluitvorming vormt de basis van de dagelijkse zorg. Deze wordt aangevuld door vaststellen van patiënttevredenheid en de achtergronden daarvan. De organisatie van zorg kan alleen passend gemaakt worden door de structurele betrokkenheid van patiënten in het ontwerpen en toepassen van innovaties. Dit voorstel hebben we zichtbaar gemaakt in de vorm van een cupcake met een basis van gedeelde besluitvorming, een glazuurlaag van tevredenheidspeiling over de zorg en een bekronende kers van structurele patiënt betrokkenheid bij zorginnovatie.

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Dankwoord

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CURRICULUM VITAE

Antonius Joseph (Tony) Poot was born on the 19th of March 1958 in Zimbabwe, attended primary school in Kenya and secondary school in the United Kingdom and came to the University of Leiden to study Medicine in 1976.

After graduation in 1983, he performed military service as physician in the air force and gained clinical experience in surgery in Breda and Delft before starting the one year course for general practitioner (GP) in Leiden in 1987. In 1988, he started a GP practice in Zoeterwoude Rijndijk which he led until 2012. During this period he developed the practice from a traditional home-based solitary GP practice to a multidisciplinary health center. During various periods he was also GP trainer, treasurer of the regional GP laboratory and chairman of the regional GP out of hours collective.

In 2002, he became a staff member at the GP specialist training programme within the Department of Public Health and Primary Care of the LUMC, with the care for older persons as subject of particular interest. When the training for GPs with a special interest for elderly care (Kaderopleiding ouderengeneeskunde) was started in Leiden in 2007, he became involved as a group trainer and was later registered as 'kaderhuisarts ouderengeneeskunde'.

In 2009, he became project leader of a care innovation and implementation project (MOVIT) within the National Elderly Care program (NPO). Health issues intervened, resulting in a new career perspective with opportunity for a PhD trajectory. This trajectory continued after the completion of the MOVIT project while fulfilling various staff functions within the department and coordinating the block 'Organisation of an Ageing Society' in the master 'Vitality and Ageing'. From 2012 onwards work on the PhD competed with these other tasks resulting in a first publication in 2014 and completion in September 2018.

Currently, in addition to his work in the master Vitality and Ageing, he is involved in the inter-professional education within the GP and Elderly Care Physicians training programs. His ambition is to continue promoting the innovation of sustainable, person centred, integrated care with care innovation and medical training as daily activities. This ambition is fuelled further by his experience as a care consumer and attaining his PhD.

DANKWOORD

Terugkijkend zie ik pas nu de verhouding tussen waarde en inspanning van mijn promotietraject. De meeste waarde ontvang ik zelf, terwijl veel inspanning is geleverd door anderen. Ik ben hier erg dankbaar voor.

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Het MOVIT team, Jacobijn Gussekloo, Monique Caljouw, Annet Wind, Claudia de Waard en Frédérique van Weering, heeft voor het grootste deel van mijn promotietijd de gewaardeerde kern gevormd van mijn werkkring. Gaandeweg zijn ook de leden van het Ouderenberaad Zorg en Welzijn Zuid-Holland Noord steeds nadrukkelijkere en persoonlijkere partners geworden met als gemeenschappelijke doel de zorg voor en met ouderen te verbeteren. Samen als MOVIT team en Ouderenberaad hebben we obstakels tot uitdagingen gemaakt, om vervolgens oplossingen te bedenken. We hebben elkaar door teleurstellingen heen geholpen en samen de triomfen gevierd. Dit proefschrift is hier een tastbaar resultaat van.

Afzonderlijk wil ik Claudia bedanken. In 2009 zijn we samen aan MOVIT begonnen. Samen hebben we MOVIT met succes volbracht. We hebben ook samen aan het vervolg van MOVIT en de wetenschap gewerkt. Zonder jou was het zeker niet gelukt.

Een onverwacht positief gevolg van promoveren is dat mijn privé- en professionele leven dichter bij elkaar zijn gekomen. Mijn vader en ik hebben onze deels overlappende promotie trajecten kunnen delen. Hij maakt mijn promotie helaas niet mee, omdat

hij kort na het voltooien van zijn promotie op 83 jarige leeftijd overleden is. Inge en onze kinderen Sophie, Rozemarijn en Bruno hebben met welwillende belangstelling en verwondering mijn af en toe zonderlinge preoccupatie gevolgd en hebben geapplaudisseerd. Ook hebben voor mij belangrijke mensen in de verschillende privé en professionele kringen belangstelling en steun gegeven; familie in Nederland en buitenland, (oude) zeil vrienden, Hippochirurgijn vrienden, huisartspraktijk Zoeterwoude en andere collega's van huisartsen- en ouderenonderzoek en opleidingen. Allemaal bedankt voor deze verrijking.

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