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# General discussion





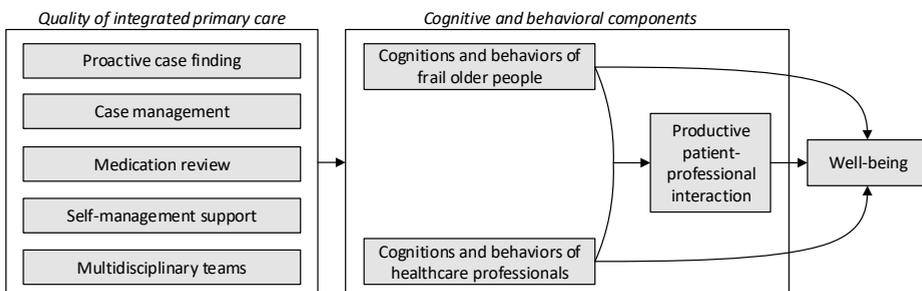
# INTRODUCTION

The main objective of this thesis was to evaluate the added value of a proactive, integrated primary care approach for community-dwelling frail older persons aged 75 years and older in the Dutch primary care setting; the *Finding and Follow-up of Frail older persons (FFF)* approach. The aim of the multicomponent FFF approach is to maintain or improve well-being in this population through proactive case finding of frail older persons in the community, case management, medication review, self-management support, and multidisciplinary teamwork led by general practitioners (GPs). In this thesis, (elements of) a newly developed theoretical model were used to evaluate the added value of the FFF approach in terms of care quality, cognitive and behavioral abilities of healthcare professionals and frail older persons, and (cost-)effectiveness. In this chapter, the main findings of the research conducted for this thesis are discussed. Furthermore, the theoretical and methodological considerations, and the implications of the research for practice and future research are described.

## Main research findings

### ***Research aim 1: To develop a theoretical model to facilitate theory-guided evaluation of integrated primary care approaches for community-dwelling frail older people.***

The theoretical model developed as part of the thesis research facilitates examination of the mechanisms assumed to underlie favorable outcomes and the effectiveness of integrated primary care delivery to community-dwelling frail older persons (Chapter 2; Figure 1).



**Figure 1.** Theoretical model to facilitate a theory-based evaluation of integrated primary care approaches for community-dwelling frail older persons (Chapter 2)

The use of an organizational approach to (re)design healthcare involves the incorporation of interrelated key components in multiple domains that are assumed to be essential for the achievement of high-quality integrated primary care (i.e., proactive case finding, case management, medication reviews, self-management support, and multidisciplinary team working) (Bodenheimer, Wagner, & Grumbach, 2002a, 2002b; Wagner, Austin, & Von Korff, 1996b; Wagner et

al., 2001). These promising elements are used commonly in integrated care approaches for older persons (Briggs, Valentijn, Thiyagarajan, & Araujo de Carvalho, 2018) and are in line with the recommendations of the World Health Organization for integrated health services (WHO, 2016; WHO, 2017). The model, based on existing theory and evidence, shows that underlying mechanisms explaining the effectiveness of integrated primary care in terms of improved well-being include cognitive and behavioral components of the persons that deliver and receive such care (Hartgerink et al., 2013; Lemmens, Nieboer, van Schayck, Asin, & Huijsman, 2008). Using perspectives on organizational knowledge creation (Nonaka, von Krogh, & Voelpel, 2006), situation awareness was identified as a central construct in decision making and performance in this dynamic, complex healthcare setting (Endsley, 2013). Healthcare professionals possess the situated awareness required to fulfill their responsibilities (Endsley, 1995), including sufficient knowledge for optimal care delivery (Wagner et al., 1996b). Moreover, cognitive diversity, reflecting differences in knowledge, beliefs, preferences, and perspectives among professionals, was identified. Complex patient populations may particularly benefit from a multiplicity of knowledge and skills possessed by various healthcare professionals (Miller, Burke, & Glick, 1998). The integration of diverse cognitions increases knowledge development among healthcare professionals working in teams (Miller et al., 1998; Mitchell & Nicholas, 2006). The theoretical model also shows that behavioral components such as coordination and collaboration among diverse healthcare professionals are assumed to influence the effectiveness of integrated care (Hartgerink et al., 2013; Lemmens et al., 2008). Coordination is believed to be essential for performance; effectively coordinated work processes are assumed to enhance outcomes efficiently (Gittell, 2006; Gittell et al., 2000). Coordination was conceptualized using a theory of coordination that emphasizes the importance of underlying relational processes; it holds that coordination entails not only the management of interdependence between tasks (Malone & Crowston, 1994), but also of that between people performing the tasks (Gittell, 2011). The relational coordination theory shares similarities with other intersubjective or relational approaches to coordination (e.g. Bechky, 2006; Faraj & Xiao, 2006; Quinn & Dutton, 2005; Weick & Roberts, 1993), however, specifically conceptualizes relational dynamics of coordination, among others (Gittell, 2011). Using insights from social psychological theories, this approach conceptualizes relational and communication links among healthcare professionals that form the basis of coordinated collective action (Gittell, 2011; Gittell, 2006). Next to cognitions and behaviors of healthcare professionals, cognitive and behavioral components of frail older persons who receive integrated primary care are diverse abilities to manage resources for the satisfaction of well-being needs (Steverink, Lindenberg, & Slaets, 2005). In contrast to various disease-specific self-management approaches focusing on (chronic) health conditions (Barlow, Wright, Sheasby, Turner, & Hainsworth, 2002; Newman, Steed, & Mulligan, 2004), this approach assumes that older persons benefit from broader cognitive (e.g., self-efficacy beliefs) and behavioral (e.g., investment behavior) abilities affecting their overall well-being (Kremers, Steverink, Albersnagel, & Slaets, 2006; Schuurmans, 2004). The model shows that these cognitions and behaviors of healthcare professionals and older persons

are assumed to influence frail older persons' well-being directly and indirectly via enhanced productive patient-professional interactions characterized by communication and good relationship dynamics.

***Research aim 2: To identify the relationship between cognitive and behavioral (self-management) abilities of community-dwelling frail older persons and their well-being.***

The cross-sectional study described in Chapter 3 showed that community-dwelling frail older persons' self-management abilities were related significantly to their physical, social, and overall well-being. Thus, the strengthening of this population's self-management abilities is expected to be beneficial for their well-being. Moreover, the study showed that the productivity of interactions with GPs, as perceived by frail older persons, was related significantly to their social and overall well-being, even after controlling for self-management abilities. Effect sizes for these relationships, however, were small, and no significant relationship with physical well-being was observed. These findings suggest that GPs may contribute to frail older persons' social and overall well-being by fostering interaction with them.

The findings of this study are in line with previous research showing that greater self-management abilities were related to greater well-being among older people (Cramm et al., 2012; Cramm et al., 2013; Goedendorp & Steverink, 2017; Steverink & Lindenberg, 2008). Effective self-management abilities are assumed to be particularly important for frail older persons, who have more difficulty realizing well-being needs due to declines in resources and opportunities (Steverink, 2014). Our findings suggest, however, that healthcare professionals also have important roles in protecting older persons' well-being and preventing resource loss in old age. Productive interactions with GPs contributed uniquely to frail older persons' well-being, in agreement with previous studies documenting the importance of productive patient-professional interactions for the well-being of chronically ill patients (Cramm & Nieboer, 2015; Kuipers, Cramm, & Nieboer, 2019).

***Research aim 3: To evaluate the quality of integrated primary care delivery and usual care delivery, and its association with productive patient-professional interactions.***

In the mixed-methods study described in Chapter 4, we assessed (1) the implementation of interventions in several areas of system redesign in GP practices (11 FFF and 4 control), (2) healthcare professionals' perceptions of the quality of primary care, and (3) GPs experiences with the FFF components. The examination of successfully implemented interventions was guided by the six areas of system redesign of the Chronic Care Model (CCM); self-management support, delivery system design, decision support, clinical information systems, healthcare system, and community (Wagner et al., 2001). The study showed that GP practices following the FFF approach implemented on average significantly more interventions falling under the scope of the CCM than did control GP practices.

Several reviews have shown that integrated care programs can have a beneficial impact on the (perceived) care quality (e.g., Baxter et al., 2018; de Bruin et al., 2012; Ouwens, Wollersheim, Hermens, Hulscher, & Grol, 2005). Many quality improvement evaluations based on the CCM have been conducted. In a review, Coleman and colleagues (2009) concluded that integrated programs modelled on (elements of) the CCM generated improvements in primary care quality. Most CCM-based programs have been developed for chronically ill patients; few programs target primary care for (frail) older persons (Boult et al., 2013; Hoogendijk et al., 2016; Spoorenberg, Wynia, Uittenbroek, Kremer, & Reijneveld, 2018). Our study indicated that primary care for frail older persons that is aligned with (elements of) the CCM was associated with higher levels of quality.

The longitudinal survey showed that healthcare professionals perceived that the FFF approach can have positive effects on the quality of primary care. Compared with the perceived quality of care in usual primary care practices, healthcare professionals in the integrated care approach FFF reported higher quality of care at follow-up (overall care quality as well as higher scores on the six separate dimensions of the CCM). This study indicated that proactive, integrated care for community-dwelling frail older persons is associated with greater care quality as perceived by healthcare professionals in the primary care setting.

These findings are in line with those of previous studies, such as Dutch healthcare professionals' perceptions of improved care quality with the implementation of disease management programs (Cramm & Nieboer, 2012; Cramm & Nieboer, 2013) and a CCM-based integrated care program targeting older persons (Uittenbroek, Kremer, Spoorenberg, Reijneveld, & Wynia, 2017). Some of these studies, however, did not involve a control group, which prohibited comparison with the perceived quality of usual primary care.

Qualitative interviews indicated that GPs' main motives for FFF approach implementation were populational aging and transformations in Dutch primary healthcare. Proactive care delivery (e.g., frailty screening) and multidisciplinary collaboration (e.g., consultation) were considered to be particularly important elements of this approach. Differences in the FFF implementation and execution among GP practices were found mainly in screening (e.g., patient selection), multidisciplinary consultation (e.g., disciplines involved), and the organization of long-term follow-up of frail older persons. The lack of structural financing and manpower, and inadequacy of ICT systems were considered to be essential barriers to the implementation and embedding of the FFF approach in general practice.

In line with our findings, a review of CCM implementation (Kadu & Stolee, 2015) revealed variation in the adaptation of (elements of) these programs in primary care organizations. Important barriers to their implementation and maintenance were related to the internal organization set-

ting and corresponded to barriers experienced by GPs in our study (i.e., related predominantly to organization capacity, e.g., lack of financial resources and staff) (Kadu & Stolee, 2015).

In the longitudinal study described in Chapter 5, we assessed (the relationship between) community-dwelling frail older persons' perspectives on the quality of primary care (FFF and usual) in accordance with the CCM and the perceived productivity of patient-professional interactions. The outcomes showed significant improvements in perceived quality of primary care, perceived productive interaction with the GP and practice nurse over time in both the intervention and control group. There were, however, no significant differences in overall quality of care and productive patient-professional interactions between the intervention and control group at baseline and at 12-month follow-up. Perceived care quality was associated significantly with the perceived productivity of interactions with GPs and practice nurses in both groups. This study adds to the existing research by showing that quality of care as perceived by frail older persons enhanced the productivity of their interactions with GPs and practice nurses.

Insufficient attention has been paid to older persons' experiences with care (Briggs et al., 2018). Previous studies have shown that older persons perceive that integrated care provided in accordance with (elements of) the CCM is of greater quality than usual primary care (Boyd et al., 2010; Uittenbroek et al., 2017). Disease management program implementation was also found to significantly improve the experienced quality of care among chronically ill patients (Cramm, Rutten-van Mölken, & Nieboer, 2012; Cramm, Jolani, van Buuren, & Nieboer, 2015). Although our study also showed significant improvements in the perceived quality of primary care among community-dwelling frail older persons, this perception did not differ between the intervention and control groups; quality improvements over time were found in both groups. This finding may be explained by the suboptimal implementation of the FFF approach and quality improvement initiatives (and possibly other trends in primary care) in the control practices during the study period. Nevertheless, previous research has shown that (changes in) care quality as perceived by healthcare professionals improved chronically ill patients' experiences of care delivery over time (Cramm & Nieboer, 2013).

Although evidence supports the ability of CCM-based programs to improve the quality of care, less research has been conducted on the effect of care quality on the productivity of patient-professional interactions. In line with findings from chronically ill patients (Cramm & Nieboer, 2014; Cramm & Nieboer, 2016), we found that high-quality care fosters the productivity of community-dwelling frail older persons' interactions with GPs and practice nurses. Ultimately, such productive interactions lie at the heart of healthcare delivery (Goodwin, 2016) and are considered to be important in enhancing patient outcomes (Wagner et al., 1996b; Wagner et al., 2001; Wagner et al., 2005); indeed found that productive interactions with GPs are related to frail older persons' well-being (Chapter 3).

***Research aim 4: To evaluate the integrated primary care approach regarding well-being and determine the (cost-)effectiveness of the approach, relative to the provision of usual primary care to community-dwelling frail older persons.***

In the longitudinal study with a matched quasi-experimental design described in Chapter 6, the (cost-)effectiveness of the FFF approach was compared with that of usual primary care for community-dwelling frail older persons. Cost-utility and cost-effectiveness analyses were conducted. Different analyses (including univariate, multilevel and propensity score matched analyses) yielded slightly different results regarding the estimated costs and effects. Irrespective of the approaches to analysis and missing data, however, the findings suggest that the FFF approach is most likely not (cost-)effective compared with usual primary care delivery in terms of quality-adjusted life years (QALYs) and subjective well-being over a 12 month-period.

These findings are in line with the inconclusive evidence for the (cost-)effectiveness of proactive integrated care interventions (e.g. Blom et al., 2018; de Bruin et al., 2012; Eklund & Wilhelmson, 2009; Hopman et al., 2016; Low, Yap, & Brodaty, 2011). A systematic review of such interventions for frail older persons (Looman, Huijsman, & Fabbriotti, 2018b) revealed no effect on most reported outcomes and limited evidence for cost-effectiveness, but the authors suggested that frail older persons' well-being is a less frequently reported but more promising outcome in terms of effectiveness (Looman et al., 2018b). The incorporation of well-being measures in evaluations of care approaches targeting older persons is recommended, as these measures may represent a wider range of benefits that transcend health domains (Makai, Brouwer, Koopmanschap, Stolk, & Nieboer, 2014). Despite the inclusion of frail older persons' subjective well-being as a primary outcome along with health-related quality of life in our evaluation, however, we found no effect. The lack of evidence for the (cost-)effectiveness of the FFF approach compared with usual primary care was not an isolated finding; it underlines the complexity of integrated care and its evaluation.

Various explanations for the lack of effect in our study can be postulated. The effectiveness of integrated care programs depends on their implementation (Øvretveit & Gustafson, 2002), which is challenging due to the complexity of such programs (Moore et al., 2015). Suboptimal implementation of (elements of) the FFF approach was found in our research, which may have impacted the (lack of) effects (Craig et al., 2008; Moore et al., 2015; Steckler & Linnan, 2002). The delivery of usual primary care also can be complex and susceptible to changes over time (Tsiachristas, Stein, Evers, & Rutten-van Mólken, 2016). The Dutch primary healthcare system is more strongly developed than are systems in many other European countries (Kroneman et al., 2016). During the period of this research, important policy reforms may have impacted primary care delivery to community-dwelling frail older persons. A major reform of long-term care in the Netherlands, including the introduction of the new Long-term Care Act [Wet Langdurige Zorg, WLZ], was introduced during our data collection period. As of 2015, a pillar of this reform was

the shift from institutional care to care in the home-setting, with limited admission to nursing homes (Koopmans, Pellegrom, & van der Geer, 2017; Maarse & Jeurissen, 2016). The responsibility for the provision of adequate care to community-dwelling older persons has been shifted increasingly to the primary care setting (Koopmans et al., 2017). Moreover, other non-residential forms of care, including support and services for older persons, were decentralized to municipalities under the WMO 2015 (Maarse & Jeurissen, 2016). Resulting challenges in primary care include residence of more frail older persons in the community and their reliance on informal and home care (Koopmans et al., 2017). Policy reforms that impact the organization of primary care may have fostered the shift toward more integrated care delivery in the control GP practices included in this research; these practices reported in general “basic or intermediate support for integrated care” (Chapter 4), which may indicate the provision of low intensity integrated care (Tsiachristas et al., 2016). The high standards of the Dutch healthcare system, (recent) developments in primary care favoring service integration, and the suboptimal implementation of the FFF approach in intervention practices could have resulted in an insufficient contrast between the study groups, which may have obscured the added value of the FFF approach.

### **Theoretical reflection**

The theoretical model presented in this thesis was developed to identify and increase our understanding of mechanisms underlying integrated primary care approaches for community-dwelling frail older persons. Many theoretical models have been developed to gain insight into the core elements of successful integrated care programs; the CCM, developed by Wagner and colleagues (2001), is well-known and widely used (Amelung et al., 2017). The CCM and its derivatives, such as the expanded CCM (Barr et al., 2003), provide valuable frameworks for the design of (components of) integrated care approaches to improve care quality and patient outcomes. However, these models have limited ability to reveal and operationalize the mechanisms underlying integrated care delivery. Wagner and colleagues (2001) emphasized that the CCM is predominantly a synthesis of evidence-based system changes that is useful in directing quality improvement initiatives, and not an explanatory theory. According to this model, improved patient outcomes result from high-quality integrated care provision via productive patient-professional interactions (Bodenheimer et al., 2002a, 2002b; Wagner, Austin, & Von Korff, 1996a); the model, however, does not provide for sufficient operationalization of components such as essential features of productive interactions (Realpe & Wallace, 2010) or theorization about underlying mechanisms through which favorable outcomes are produced (Higa & Davidson, 2017). Other, more analytical, frameworks have been developed to aid the systematic understanding of (the impact of) integrated care (e.g. Minkman, Vermeulen, Ahaus, & Huijsman, 2013; Valentijn, Schepman, Ophij, & Bruijnzeels, 2013; van der Klauw, Molema, Grooten, & Vrijhoef, 2014); but little attention has been given to the importance of underlying cognitive and behavioral components that may drive the effectiveness of integrated primary care. By drawing on existing theory and evidence, our theoretical model represents a next step, allowing the identification of

underlying mechanisms and operationalization of model components to facilitate the evaluation of integrated primary care approaches; it highlights the cognitive and behavioral mechanisms underlying (integrated) primary care delivery. Taking an approach rooted in cognitive and behavioral psychology, Hartgerink and colleagues (2013) conceptualized professionals' cognitions and behaviors (e.g., interprofessional collaboration), as well as the team and organizational contexts, as critical for integrated care provision in hospitals (Hartgerink et al., 2013). Lemmens and colleagues (2008) developed a theoretical model for the evaluation of disease management that also has professional- and patient-related components. Our model complements these theoretical underpinnings by explicitly conceptualizing the cognitions and behaviors of older persons as drivers of effectiveness in terms of overall well-being. A person's ability to adapt and self-manage is considered to be crucial when facing social, physical and emotional challenges (Huber et al., 2011; Huber et al., 2016); both cognitive and behavioral self-management abilities aimed at maintaining well-being were included in the model. In line with the reasoning of the CCM, our model also acknowledges the importance of productive patient-professional interactions, but it does not consider them to be prerequisite to improved patient outcomes. Indeed, our research showed that self-management abilities and productive interactions were related significantly to frail older persons' subjective well-being, whereas we found no significant indirect effect of self-management abilities on well-being via productive patient-professional interactions. Based on theory and empirical findings, our theoretical model assumes that patient outcomes can be impacted directly or indirectly via enhanced productive patient-professional interactions.

Although the model facilitates a theory-guided evaluation of integrated care initiatives in the primary care setting, it features little elaboration on contextual factors associated with integrated care delivery and patient outcomes, such as policies and financing at the macro-level (Leijten et al., 2018) and the influence of local communities and neighborhoods at the meso-level (Cramm, van Dijk, & Nieboer, 2013; van Dijk, Cramm, & Nieboer, 2016). In addition, not all (relationships among) model components were tested empirically in the studies presented for this thesis. In particular, healthcare professionals' cognitions and behaviors should be examined more accurately, such as with empirical testing of the effect of situation awareness on integrated care by means of an increased understanding of patient's needs and critical information among healthcare professionals (Mosier & Fischer, 2010; Reader, Flin, Mearns, & Cuthbertson, 2011; Wright & Endsley, 2008).

## Methodological considerations

### *Study design*

This research was conducted using a quasi-experimental design, which is suggested to be appropriate for the evaluation of the (cost-)effectiveness of complex integrated care approaches when adequate matching is performed (Craig et al., 2008; Tsiachristas et al., 2016), despite the greater

susceptibility of such designs to bias. Experimental designs, including randomized controlled trials, are considered to be most robust for the evaluation of intervention effectiveness; they increase the confidence that differences in outcomes can be attributed to intervention effects (Bonell, Fletcher, Morton, Lorenc, & Moore, 2012; Eccles, Grimshaw, Campbell, & Ramsay, 2003). Integrated care approaches, however, involve organizational and professional changes, and the contamination of control groups is likely, and may cause biased estimates of their effects (Eccles et al., 2003). The performance of cluster randomized trials, in which random allocation is performed at the group level (e.g., patients in a single GP practice), has been proposed to minimize contamination bias (Eccles et al., 2003; Raine et al., 2016). Still, the possibility of hidden contextual differences with which the intervention and control groups interact remains (Rickles, 2009), and the inclusion of an adequate number of clusters is required to provide sufficient power, which was not feasible in this research (given the limited number of (participating) GP practices in the study area). We thus used a matched quasi-experimental design with one pretest and one posttest over a 12-month follow-up period. Older persons in the intervention group were matched one-to-one with older persons in the control group based on sex, educational level, and frailty scores. The control group obtained significantly more single persons than did the intervention group. Although outcome estimates were adjusted for observed differences between groups, unobserved differences may have affected the results.

The choice of an adequate comparator in evaluations of integrated care is challenging (Craig et al., 2008; Kadu, Ehrenberg, Stein, & Tsiachristas, 2019). Tsiachristas and colleagues (2016) stated that the provision of usual care, or standard practice, is often considered to be a suitable control. A limited number of control GP practices ( $n = 4$ , compared to  $n = 11$  intervention GP practices) was included in the present research, but we performed matching at the individual, rather than practice, level when assessing the (cost-)effectiveness of the FFF approach. More important may be the risk of contamination; FFF-based and usual primary care were delivered in the same region, alongside one another. Due to the proximity of GP practices and existing collaboration in the study area, healthcare professionals in the control group may have adopted practices from the intervention group. In addition, interviews with participating control practices revealed some healthcare professionals' strong motivation and eagerness to organize care and support for their older populations. Thus, control GP practices included in our study may have been initiating developments toward integrated care delivery, at least more than average. They may have perceived that the FFF approach would not add to their usual care delivery and may have been particularly eager to serve as comparators in this research.

A considerable strength of this study was the theory-guided evaluation of the FFF approach. Such theoretical approach to the evaluation of complex interventions is considered to be essential to gain a deeper understanding of their working mechanisms (Craig et al., 2008). This approach enabled empirical testing of the proposed (relationships among) model components with (inte-

grated) primary care in a real-life setting. In addition, given the complexity of the FFF approach and its implementation, a mixed methods approach was used to extensively examine FFF and usual primary care implementation processes. Interventions in relevant areas of system redesign, according to the CCM, were examined systematically and described. Qualitative interviews with GPs provided a richer understanding of the variation among practices in the implementation of (elements of) the FFF approach and revealed barriers to such implementation. The combined examination of quantitative and qualitative data provided a deeper understanding of the complexities and processes of (integrated) care provision in the participating GP practices.

### ***Setting and participants***

The FFF approach was initiated and implemented in western North Brabant Province, the Netherlands. The setting and participants were determined by the GP practices in the region and the willingness of healthcare professionals and frail older persons to participate. We applied several eligibility criteria for frail older persons that may have affected the generalizability of the findings. We adopted a multidimensional perspective on frailty (Gobbens, Luijkx, Wijnen-Sponselee, & Schols, 2010), although considerable debate surrounds the meaning, conceptualization, and measurement of frailty (Bergman et al., 2007; Brown & Covinsky, 2018; Dent, Kowal, & Hoogendijk, 2016; Junius-Walker et al., 2018; Vergara et al., 2019). The TFI is used to assess physical, social and psychological domains of frailty (Gobbens, van Assen, Luijkx, Wijnen-Sponselee, & Schols, 2010); it has good psychometric properties (Gobbens et al., 2010; Gobbens, Boersma, Uchmanowicz, & Santiago, 2020; Metzelthin et al., 2010; Zhang et al., 2020) and is used frequently in the Netherlands and other European countries (Op Het Veld et al., 2019; Zhang et al., 2020). We acknowledge that the use of the TFI may not yield full insight on essential aspects and components of frailty. Healthcare professionals participating in the study could perform additional examinations or interviews to assess frailty, even with persons whose TFI scores did not indicate frailty. Furthermore, use of a multidimensional perspective on frailty resulted in a heterogeneous population of frail older persons. Persons with constellations of deficits in multiple domains (i.e., physical, social, and psychological) are expected to have different healthcare needs than do persons with physical frailty alone. This heterogeneity among frail older people is increasingly recognized (Looman et al., 2018a; Manthorpe & Iliffe, 2015) and may contribute to the limited effectiveness of integrated care (Eklund & Wilhelmson, 2009; Hoogendijk, 2016; Looman et al., 2018b; Spooenberg, 2017). Whether the FFF approach is more beneficial for certain subpopulations of frail older persons should be investigated further.

### ***Measures***

The outcomes evaluated in this research were measured using validated and reliable instruments. Most of these instruments are used commonly with older populations, including the SPF-ILs, used to measure our primary outcome of well-being (Cramm et al., 2013; Frieswijk, Steverink, Buunk, & Slaets, 2006; Nieboer & Cramm, 2018). The importance of well-being is increasingly

acknowledged in research, policy and practice (Linton, Dieppe, & Medina-Lara, 2016; Steptoe, Deaton, & Stone, 2015), and this outcome should be included in evaluations of integrated care approaches. In addition, the relational coordination instrument was used to assess the productivity of patient-professional interactions (Gittell, 2000; Gittell, Godfrey, & Thistlethwaite, 2013). The assessment of the perceived productivity of patient-professional interactions with professionals from several disciplines was difficult, as many older persons could not differentiate the healthcare professionals. For example, many older persons included in this research could not remember the elderly care physician and had difficulty differentiating between homecare and geriatric nurses involved in their care. We were, however, able to reliably assess their interactions with GPs and practice nurses, who are considered to be among the most important and frequently consulted healthcare professionals in the Dutch primary care setting (Jansen, Spreeuwenberg, & Heijmans, 2012; Kroneman et al., 2016). Furthermore, we primarily used self-perceived outcomes, instead of objective measures, as in many evaluations of complex interventions. To increase validity, we used trained, blinded interviewers who conducted interviews with frail older persons in their homes. All interviewers had a healthcare background and lived in the research area to assure a cultural fit.

Our theoretical model emphasizes the importance of coordination and collaboration among healthcare professionals in integrated care delivery. The small number (75 at baseline, 78 at 12-months) and diversity (e.g., GPs, elderly care physicians, practice nurses) of participating professionals made reliable assessment of coordination among them using the relational coordination instrument difficult. In addition, social desirability is considered to be a risk in the use of self-reported measures with healthcare professionals. Naturally, healthcare professionals were aware of their group allocations, which may have increased the tendency to provide socially desirable answers with respect to, for example, their perceived quality of care. We did, however, also include more objective measures of care quality, such as the successful implementation of interventions in the intervention and control GP practices, which yielded similar findings; perceived and objective care quality (in terms of implemented system redesign interventions) was higher in the intervention GP practices (Chapter 4). In addition, our findings are in line with reviews showing the beneficial effects of integrated care on the (perceived) quality of care (e.g. Baxter et al., 2018; de Bruin et al., 2012; Ouwens et al., 2005).

Despite strong recommendations to adopt a societal perspective (Hakkaart-van Roijen, van der Linden, Bouwmans, Kanters, & Tan, 2015), the economic evaluation was performed from the narrower healthcare perspective, which still dominates in such evaluations of integrated care (Kadu et al., 2019). A limitation of the current study is that informal care measures were not considered in the economic evaluation, due primarily to the lack of resources for the collection of reliable data on informal care delivery among frail older persons. However, interviews with healthcare professionals, (project) managers, and frail older persons provided (limited) insight

into informal caregiving in the study population; no indication of an unequal distribution of informal care costs between groups was found. Nevertheless, the impact of informal care in our economic evaluation remains unknown.

### **Implications for practice**

Our findings confirm the important contributions of frail older persons and healthcare professionals to the maintenance of well-being in this population. Effective self-management abilities of frail older persons may become increasingly important with the establishment of governmental policies aiming to enhance this population's self-sufficiency and independent living in the community for as long as possible (de Klerk, Verbeek-Oudijk, Plaisier, & den Draak, 2019; van Campen, Iedema, Broese van Groenou, & Deeg, 2017). Instead of focusing on the management of chronic conditions, the self-management of overall well-being should be supported in integrated care programs via, for example, interventions aiming to enhance broader cognitive and behavioral self-management abilities (Steverink, 2014). Increasing numbers of frail older persons receive care and support in the primary care setting. Productive patient-professional interactions may be an important resource for the maintenance of their well-being and prevent a decline in needs contributing to well-being as these persons face age-related changes in multiple domains (Williams, Haskard, & DiMatteo, 2007).

Although the (cost-)effectiveness of the FFF approach could not be demonstrated, integrated care delivery represents a step forward in improving the (perceived) quality of care. GPs in the intervention practices valued many elements of the FFF approach, such as multidisciplinary teamwork, the availability of geriatric expertise in the primary care setting, and the proactive organization of care and support. Promising findings with respect to the quality of care, with recognition of the challenges of implementing and evaluating integrated care approaches in real-life settings, warrant further investigation of the FFF approach in the primary care setting.

### **Recommendations for future research**

Despite the comprehensive research conducted on the organization of FFF-based and usual primary care, whether the lack of (cost-)effectiveness is attributable to the ineffectiveness of the FFF approach or implementation problems in the GP practices remains unknown. The degree to which frail older persons in the control GP practices received elements of FFF-based care also remains unknown. Extensive research on fidelity (the extent to which a program is delivered as intended in practice) is recommended (Moore et al., 2015). In addition, the length of the evaluation should be considered; a follow-up period of 12 months as in this research (and many other evaluations of complex interventions), may be insufficient to capture the impact of integrated care. Furthermore, systematic collection of qualitative data from frail older persons is recommended to gain a deeper understanding of their experiences with care delivery. Finally, careful consideration of the choice of the control group in evaluations of integrated care approaches is

strongly recommended. Usual primary care delivery, although frequently considered to be an appropriate comparator (Tsiachristas et al., 2016), can be complex in itself and well-performing practices may be particularly eager to participate as control, which may hamper sound evaluation.

### ***Conclusion***

This thesis research indicated that the FFF approach to the provision of integrated primary care to community-dwelling frail older persons holds promise for the improvement of care quality, a prominent goal of this approach. FFF implementation did not, however, impact well-being over the 1-year follow-up period, as expected. The added value of integrated care in terms of frail older persons' well-being has not been demonstrated, which adds to the inconclusive body of evidence regarding the (cost-)effectiveness of these programs in the primary care setting. The use of a sound theoretical framework to evaluate (the complexities of) integrated primary care is key; it enables the construction of a cumulative understanding of underlying mechanisms, beyond the presence of the program's components. Cognitions and behaviors of healthcare professionals and frail older persons are considered to be core mechanisms driving the (lack of) effects of integrated care. Populational aging and the implementation of policy reforms that promote aging in place necessitate a deeper understanding of the mechanisms underlying integrated primary care and facilitate sound evaluation of these complex programs in real-life settings.

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