General introduction

INTRODUCTION

Traditional primary care in the Netherlands is ill equipped to meet the complex (healthcare) needs of frail older persons who live independently at home. Integrated care is advocated to improve the quality of care and patient outcomes. However, the added value of integrated primary care for community-dwelling frail older persons remains inconclusive, and important underlying mechanisms that drive (a lack of) effectiveness are often ignored. This thesis reports on a theory-guided evaluation of an integrated primary care approach for community-dwelling frail older persons, called *Finding and Follow-up of Frail older persons* (FFF).

Care and support for frail older persons

The number and proportion of older people are increasing globally. In the Netherlands, approximately 1.4 million people are aged 75 years and older, and this number is expected to increase to 2 million by 2030 (CBS, 2020b). A growing number of older persons lives at home for longer (de Klerk, Verbeek-Oudijk, Plaisier, & den Draak, 2019; van Duin, Stoeldraijer, van Roon, & Harmsen, 2016), which older persons generally prefer (Doekhi, de Veer, Rademakers, Schellevis, & Francke, 2014; Sixsmith et al., 2014; Wiles, Leibing, Guberman, Reeve, & Allen, 2012). Currently, around 92 percent of persons aged 75 years and older in the Netherlands lives independently in the community (CBS, 2020a; de Klerk et al., 2019), and many of them are frail. Frailty, a predominant public health concern associated with populational aging (Ambagtsheer et al., 2019; Boeckxstaens & De Graaf, 2011; Cesari et al., 2016), is defined as a "dynamic state affecting an individual who experiences losses in one or more domains of human functioning (physical, psychological, social), which is caused by the influence of a range of variables and which increases the risk of adverse outcomes" (Gobbens, Luijkx, Wijnen-Sponselee, & Schols, 2010, p.342). Community-dwelling frail older persons have lower well-being levels than do non-frail persons (Andrew, Fisk, & Rockwood, 2012; Crocker et al., 2019). In the face of changes and losses in resources and opportunities at older ages, the realization and maintenance of well-being may be more difficult for frail older persons (Nieboer & Cramm, 2018; Steverink, 2014). The protection of well-being in aging populations with associated frailty is a core challenge in healthcare worldwide (Steptoe, Deaton, & Stone, 2015).

Due to populational aging and the reformation of (healthcare) policies, increasing numbers of frail older persons receive care and support from healthcare professionals in the primary care setting (de Klerk et al., 2019; Hoogendijk, 2016; Kroneman et al., 2016), with general practitioners (GPs) holding gatekeeping positions at the core of the system (Kroneman et al., 2016). In GP practices, practice nurses often collaborate in the provision of care to older persons (de Groot, de Veer, Versteeg, & Francke, 2018; Kroneman et al., 2016). Although the primary care setting is acknowledged to be suitable for the delivery of care and support to frail older persons (De Lepeleire, Iliffe, Mann, & Degryse, 2009; Lacas & Rockwood, 2012; Schers, Koopmans, & Olde

Rikkert, 2009), increased frailty has resulted in an increased complexity of (healthcare) needs and growing demand for services (de Groot et al., 2018). Compared with the general population of community-living older persons, frail older persons make a greater appeal on care and support provided by, for example, GPs and community nurses (de Booys et al., 2018). Although the Netherlands has a strongly developed primary care system (Kroneman et al., 2016), the quality of primary care for older persons with complex problems is increasingly difficult to maintain and insufficient attention is being paid to older persons' well-being (Schers et al., 2009). Most traditional healthcare systems were based on acute, episodic care models that are ill equipped to meet the long-term complex (healthcare) needs of this population (Amelung et al., 2017; Nolte & McKee, 2008). Such predominantly reactive systems focus less on prevention and early detection (de Booys et al., 2018; de Wit & Schuurmans, 2017), and generate considerable concern about the fragmentation of health services provided by diverse healthcare professionals (Boeckxstaens & De Graaf, 2011). The National Health Care Institute of the Netherlands has ascertained that frail community-dwelling older persons do not consistently receive appropriate care and support that is tailored to their needs and wishes, with shortcomings in areas such as communication and cooperation among healthcare professionals (de Booys et al., 2018). In addition, primary care professionals, such as GPs and practice nurses, are generally not trained to provide complex care to frail older persons, and thus may lack specific expertise (de Booys et al., 2018). Geriatric expertise is insufficiently integrated into primary care (Duque, Giaccardi, & van der Cammen, 2017; Schers et al., 2009). The fragmentation of health services, lack of effective coordination and discontinuities in care may result in the delivery of inadequate and inefficient care, which may in turn reduce the quality of primary care and well-being of community-dwelling frail older persons.

Expectations for integrated primary care

The situation described in the previous section points to the need for the reorientation of traditional healthcare systems, which are still primarily reactive, medically and disease oriented (de Booys et al., 2018), and ill equipped to meet frail older persons' complex needs (Boyd et al., 2005; Guthrie, Payne, Alderson, McMurdo, & Mercer, 2012; Hughes, McMurdo, & Guthrie, 2013; van Weel & Schellevis, 2006), to more proactive and integrated primary care models (Hopman et al., 2016). Integrated care is defined as "a well planned and well organized set of services and care processes, targeted at the multi-dimensional needs/problems of an individual client, or a category of people with similar needs/problems" (Nies & Berman, 2004, p.12). It is assumed to connect fragmented (healthcare) services resulting in the delivery of coherent, comprehensive, high-quality care to frail older persons living at home (Mann, Devine, & McDermott, 2019). Integrated care programs involve systemic changes in various interrelated areas (Wagner et al., 2005) and have multiple key elements (Hopman et al., 2016). First, integrated care approaches are proactive (involving, e.g., frailty screening) and effectively coordinated (among, e.g., healthcare professionals and sectors) to meet persons' health and social needs (Hopman et al., 2016; Wagner

et al., 2001). Second, integrated care is patient-centered; individuals' personal needs are addressed and they are actively involved in their own care and decision-making (Hopman et al., 2016). Such approaches may include, for example, comprehensive assessments of needs in multiple domains (e.g., social, psychological, and functional) and the development of individualized care plans. Third, integrated care approaches include the (simultaneous) provision of diverse interventions (Hopman et al., 2016) addressing, for example, the delivery system design (e.g., case managers appointment, medication reviews, and systematic follow-up), community resources (e.g., building partnerships with local community centers and service providers), and self-management support (Wagner et al., 2001). Frail older persons are expected to manage various interacting physical, psychological, and/or social problems that challenge the maintenance of their health and well-being (Goedendorp & Steverink, 2017). They may benefit from self-management interventions to enhance cognitive and behavioral abilities for resource management to maintain well-being and to avoid or cope with losses (Steverink, Lindenberg, & Slaets, 2005). Healthcare professionals can help frail older people optimize their ability to maintain well-being (WHO, 2017) by, for example, organizing resources to provide self-management strategies and collaborating with these individuals in assessing problems, setting goals, establishing action plans, and providing ongoing follow-up (Bodenheimer, Wagner, & Grumbach, 2002a, 2002b). Finally, integrated care initiatives are multidisciplinary with diverse (healthcare) professionals included (Hopman et al., 2016). Well-functioning multidisciplinary teams with also non-physician members (e.g., practice nurses and community nurses) are essential for the provision of this type of care and support (Wagner et al., 2001). Integrated care approaches also include consultation with primary care providers with specialist expertise (e.g., elderly care physicians) (Schers et al., 2009).

The provision of integrated primary care is assumed to enhance productive interactions between patients and (teams of) healthcare professionals that organize and coordinate care and support, thereby improving patient outcomes (Wagner et al., 2005). Productive patient-professional interactions comprise partnerships between patients and primary care teams (Coulter & Collins, 2011; Wagner et al., 2001) and are characterized by assessments (including of patients' perspectives), the provision of support (e.g., helping patients with goal-setting), the implementation of interventions to optimize treatment and well-being, and continuous planned follow-up (Wagner et al., 2001). Relationships based on shared goals, shared knowledge, and mutual respect, which reinforce and are reinforced by high quality (i.e., frequent, timely, accurate, and problem-solving) communication, are essential for the productivity of interactions (Batalden et al., 2015; Gittell, 2012; Gittell & Douglass, 2012). Such interactions require healthcare professionals to be prepared and proactive (i.e., possess the necessary expertise, patient information, and resources), and patients to be activated and prepared (i.e., possess skills, information, and confidence) (Wagner et al., 2001). Although well-designed integrated primary healthcare is assumed to be more effective in meeting the (complex) needs of patients through productive patient-professional interactions,

ultimately improving patient outcomes (Barr et al., 2003; Wagner et al., 2005), clear evidence remains largely lacking.

Current evidence for integrated primary care approaches

Integrated care approaches are assumed to offer the potential to enhance, among other aspects, the quality of care and cost-effectiveness of care, and the recipients' well-being (Coleman, Austin, Brach, & Wagner, 2009; Gress et al., 2009; Kodner & Kyriacou, 2000; Kodner & Spreeuwenberg, 2002; Mattke, Seid, & Ma, 2007). Due to the widespread interest in integrated care, many integrated primary care approaches targeting frail older persons have emerged over the years. However, evidence for their effectiveness and cost-effectiveness remains mixed (Blom et al., 2018; de Bruin et al., 2012; Eklund & Wilhelmson, 2009; Hopman et al., 2016; Looman, Huijsman, & Fabbricotti, 2018; Low, Yap, & Brodaty, 2011; Smith, Wallace, O'Dowd, & Fortin, 2016). In addition, evidence that such approaches improve the productivity of patient-professional interactions (Cramm & Nieboer, 2014), which is assumed to be important in enhancing patient outcomes (Bodenheimer et al., 2002b; Wagner, Austin, & Von Korff, 1996), is limited. A wide variety of outcome measures has been used for the evaluation of integrated care. In a recent systematic review, Looman and colleagues (2018) showed that most (cost-)effectiveness studies have considered (primary) outcomes related to, for example, (instrumental) activities of daily living, mortality, and physical functioning, most of which have not been affected by the interventions examined. A less frequently reported, but more promising, outcome in terms of effectiveness is the well-being of frail older persons (Looman et al., 2018). Integrated primary care is provided from a holistic perspective in which well-being is important (Schuurmans, 2004; Valentijn, Schepman, Opheij, & Bruijnzeels, 2013). To explore the full potential of integrated care for community-dwelling frail older persons, the focus of integrated care approaches (and their evaluation) should be shifted from (physical) functioning to well-being (Cramm & Nieboer, 2016; Looman et al., 2018). This situation emphasizes the importance of using appropriate outcome measures in economic evaluations of care programs targeting older people, with consideration of broader well-being aspects in addition to widely used health-related quality of life measures (Makai, Brouwer, Koopmanschap, Stolk, & Nieboer, 2014).

Given the mixed results regarding the effects of integrated primary care for older persons, our understanding of the mechanisms explaining (a lack of) effectiveness must be improved. Integrated care programs are considered to be complex (Tsiachristas & Rutten-van Mölken, 2017); they consist of various interrelated components, have multiple and diverse intended outcomes, and entail flexibility or tailoring to individuals or contexts, and their effects are impacted by the behaviors of the people delivering and receiving them (Craig et al., 2008). Complex programs are frequently evaluated in terms of patient outcomes, but the theoretical foundations of such approaches are often limited and underlying mechanisms remain largely unclear (Campbell et al., 2007; Goodwin, 2017). Based on previous research (Hartgerink et al., 2013; Lemmens, Nieboer,

van Schayck, Asin, & Huijsman, 2008), we assume that mechanisms explaining the effectiveness of integrated care include the cognitions and behaviors of healthcare professionals (e.g., situation awareness, and collaboration) and older persons (e.g., self-management abilities), which impact the productivity of patient-professional interactions and well-being. A new theoretical model is needed to facilitate the sound evaluation of complex integrated primary care approaches aiming to maintain the well-being of community-dwelling frail older persons, including the examination of underlying mechanisms and intended outcomes.

Research aims

The main objective of this thesis was to determine the added value of a proactive, integrated primary care approach for community-dwelling frail older persons. Its four aims were:

- To develop a theoretical model to facilitate theory-guided evaluation of integrated primary care approaches for community-dwelling frail older people;
- To identify the relationship between cognitive and behavioral (self-management) abilities of community-dwelling frail older persons and their well-being;
- To evaluate the quality of integrated primary care and usual care delivery, and its association with productive patient-professional interactions;
- 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.

Finding and Follow-up of Frail older persons

For this thesis, the proactive, integrated care approach known as Finding and Follow-up of Frail older persons (in Dutch: Vroegsignalering Kwetsbare Ouderen en Opvolging) was evaluated. The ultimate objective of this approach is to maintain or improve community-dwelling frail older persons' well-being. It was implemented in GP practices in western North Brabant Province, the Netherlands, where 42.2 percent of community-dwelling older persons (age ≥ 75) is frail (Vestjens, Cramm, Birnie & Nieboer, 2016). The FFF approach advocates high-quality proactive and integrated care and support for community-dwelling frail older persons in the primary care setting. The approach has interrelated components in multiple areas of system redesign, including (i) proactive case finding, (ii) case management, (iii) medication review, (iv) self-management support, and (v) care provision by multidisciplinary teams led by GPs (including, e.g., practice nurses, physiotherapists, and elderly care physicians). Elderly care physicians are medical practitioners in the Dutch system who are specialized in primary care and geriatric medicine, which is essential in this context (Duque et al., 2017; Koopmans et al., 2010; Schers et al., 2009). They have, for example, specific competencies related to the support and treatment of community-dwelling (frail) older persons (Koopmans et al., 2010). The FFF approach thus allows for the development of geriatric expertise and consultation with professionals possessing such

expertise in the primary care setting, and fosters the involvement of other healthcare professionals specialized in geriatric medicine (e.g., geriatric nurses in the community).

The added value of the FFF approach in terms of improvements in the quality of care, cognitive and behavioral abilities of healthcare professionals and frail older persons (e.g., productive patient-professionals interactions), and (cost-)effectiveness with regard to well-being was evaluated using (elements of) a newly developed theoretical model.

Outline of the dissertation

The theoretical model used in this thesis is presented in Chapter 2. It is based on promising components of integrated primary care approaches (e.g., proactive case finding and case management), and incorporates the consideration of underlying cognitive and behavioral aspects for healthcare professionals and frail older persons, which are assumed to improve well-being. The theory-guided protocol used to evaluate the integrated primary care approach FFF is also described in Chapter 2. In Chapters 3 to 6, we report on the use of (elements of) the theoretical model in our evaluations and investigate the proposed relationships among concepts. The study presented in Chapter 3 addresses relationships of community-dwelling frail older persons' behavioral and cognitive self-management abilities and productive patient-professional interactions with their well-being. The research presented in Chapter 4 investigated healthcare professionals' perceived care quality and assessed the implementation of care interventions in GP practices implementing the FFF approach and those delivering usual primary care. An investigation of community-dwelling frail older persons' perspectives on the quality of primary care (usual and FFF), and their associations with the productivity of interactions with GPs and practice nurses, is presented in Chapter 5. The research presented in Chapter 6 examined the (cost-)effectiveness of the FFF approach relative to usual primary care in terms of community-dwelling frail older persons' well-being and health-related quality of life. An overall discussion of the main findings and reflection on methodological issues, followed by implications for policy and practice and recommendations for future research, are presented in Chapter 7.

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