Impact of person-centered and integrated care for community-living older adults on quality of care and service use and costs
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Summary
Current healthcare systems are faced with the challenge of coping with the changing demands of the growing population of older adults, while maintaining quality of care at lower cost. We developed and then implemented Embrace, a person-centered and integrated-care service for community-living older adults, which might contribute to finding a solution to these challenges. Embrace aims to improve quality of care by reducing the fragmentation in health services, improving patient outcomes, and increasing the sustainability of the healthcare system. Embrace is built on previous research regarding preventive and proactive care and support, and combines two globally recognized models, the Chronic Care Model and a population health management model, the Kaiser Permanente Triangle. The main objective of this thesis was to evaluate the effectiveness of Embrace in terms of perceived quality of care, as well as service use and costs. The second objective was to gain insight into the change in professional roles, especially that of the role of central case manager in Embrace, which might contribute to a better understanding of the effectiveness of this new service.

In the introduction to this thesis, Chapter 1, we described the challenges faced by current healthcare systems due to an ageing population, and how person-centered and integrated care can contribute to a solution for overcoming these challenges. We then presented Embrace and the two models that served as the basis for this new person-centered and integrated-care service. Finally, we explained why we focused on strengthening primary care within the context of the Dutch healthcare system. In Chapter 2, we described the study design of the randomized controlled trial (RCT) that we used to evaluate the effectiveness of Embrace. In this study, a total of 1456 community-living older adults, who were registered in 15 general-practitioner practices, participated. After inclusion, the participants were first grouped into non-disease-specific risk profiles (Complex care needs, Frail, and Robust) and then randomized to Embrace or control groups.

In Chapter 3, we presented the Patient Assessment of Integrated Elderly Care (PAIEC) questionnaire, a self-report measurement instrument that reflects the perceived quality of person-centered and integrated care and support by older adults. The PAIEC is an adapted version of the Chronic Care Model, based on the Patient Assessment of Chronic Illness
Care (PACIC) questionnaire. To be applicable in a population of healthy or unhealthy older adults, we converted the disease-related concepts into general health concepts. In addition, the response option “does not apply” was added to reduce the number of missing scores among robust older adults. Using non-parametric analysis techniques, we found that the PAIEC has good psychometric properties, with a good fit for a three-factor model, good internal consistency, and sufficient known groups and divergent validity. We therefore were able to conclude that the PAIEC is a reliable and valid measurement instrument for the evaluation of quality of person-centered and integrated care and support, as perceived by older adults.

In Chapter 4, we presented the results of the RCT, as described in Chapter 2, vis-à-vis the perceived quality of person-centered and integrated care, as measured with the PAIEC. We found that older adults receiving care and support in Embrace reported a higher level of perceived quality of care than older adults receiving usual care. This effect was most evident for those older adults receiving individual support by a case manager and was most prominent for older adults with the “Frail” risk profile. We found no significant benefits for “Robust” older adults. Alongside the RCT, in a pretest-posttest study among professionals participating in the Elderly Care Teams, we evaluated the change in perceived “level of implementation of integrated elderly care.” For this we used the Assessment of Integrated Elderly Care (AIEC) questionnaire. We found clinically relevant improvements: Participating professionals reported a “basic” level of implementation of integrated care at baseline and a “reasonably good” level after one year. However, the results also indicated that there was still room for improvement.

In Chapter 5, we presented the results of a qualitative study among eleven district nurses and social workers, who were assigned to the case manager role in the Elderly Care Teams. In general, the community nurses and social workers indicated that they were better able to meet the needs of the older adults, to provide preventive and pro-active care and support, and to prevent escalations and emergency admissions to hospitals. Moreover, case managers experienced their roles as rewarding and, at times, challenging due to high caseloads, time constraints, and the combination with a regular job. District nurses and social workers
felt that they were skilled for their tasks as case managers in a person-centered and integrated-care service. They indicated that, in future, more attention should be paid to the cultural and organizational changes brought about by implementation.

In Chapter 6, we presented the results of the cost-effectiveness study of Embrace that was performed alongside the RCT. Care and support costs and outcomes were ascertained using self-report questionnaires and register data from healthcare insurers, long-term care administrations, and municipalities. We found that the average total costs were higher in the Embrace groups than in the care-as-usual groups; statistical significance was reached for the whole sample but not for the risk profiles. Differences in health-associated outcomes were not statistically significant but tended to favor the Embrace groups compared to care-as-usual. According to current standards, Embrace is not considered to be cost-effective compared to usual care. However, it could be considered worthwhile in terms of “risk profile improvements” for older adults with “Complex care needs,” if society is willing to invest.

In Chapter 7, the findings of this thesis were summarized and discussed, including methodological considerations and implications for practice and future research. The aim of this thesis was to contribute to a solution for the challenges facing current healthcare systems. The question at the end of this thesis is: Did we succeed? Based on our findings, we can conclude that we did contribute to a solution. We succeeded in the implementation of a feasible person-centered and integrated-care service for older adults, which reduced the fragmentation in care and support services, and provided insight into the opportunities of a population-based approach. We found that Embrace is applicable to primary care and aligns with the policies of most of the societies now focusing on overcoming the challenges of an ageing population. Professionals, especially the case managers, indicated that Embrace enabled them to reduce the negative effects of fragmentation by supporting older adults navigating the healthcare landscape. Embrace improved older adults’ perceived quality of care, and, even more, it had a positive effect on older adults who were “at risk” for poor health outcomes or for increasing case complexity. However, according to current standards, Embrace was not found to be cost-effective compared to usual care, as since total average
costs were higher for Embrace in the whole sample, albeit not per risk profile.

We also found that there is room for some improvement regarding Embrace. It improved quality of care but had little benefit in terms of health-related outcomes compared to usual care and overall cost for the Embrace groups was slightly higher. The level of implementation of integrated care could increase through further education and coaching. Furthermore, new payment models and accountability agreements between providers might be needed to embed person-centered and integrated care within the healthcare system.

Further research is needed to confirm the results found in this thesis, and its generalizability should be assessed in other cultural and social settings. Furthermore, the long-term effects of Embrace need to be evaluated: More objective and technical evaluation criteria for quality of care, such as safety, effectiveness, timeliness, equitability, and efficiency, are needed. Finally, further assessment of the psychometric properties of the newly introduced measurement instruments and outcomes is needed.

Our conclusion, then, is that we did succeed in contributing towards a solution to the challenges currently facing healthcare systems. Furthermore, person-centered and integrated-care services such as Embrace should be considered as a growth model for improving population health, improving older adults' experience, and reducing per capita costs in the long run.