General discussion
1. Introduction

The objective of the work described in this thesis was first to design and secondly to test the effects of Integrative Reactivation and Rehabilitation (IRR). In this chapter the most important results of the research comprising this dissertation will be summarized by addressing the research objectives of both three explorative observational studies and one RCT study concerning the integrative psychotherapeutic nursing home programme of IRR. IRR consists of interventions to reduce multiple psychiatric symptoms of psychogeriatric patients who suffer from cognitive impairment or dementia as well as the burden of the caregiver. Methodological issues of the studies are discussed. Furthermore, implications of the results for professionals, managers and policymakers will be described. Finally, opportunities to improve IRR are explored.

2. Summary of relevant results

In chapter two a case study was presented. The case study illustrated the need and feasibility of integrative psychotherapeutic interventions based on problem-solving principles and focussed on psychiatric symptoms of psychogeriatric patients and on burden of caregivers.

In the following three chapters the results of the explorative observational studies are presented addressing three research objectives, i.e.:

1. to identify prognostic characteristics for the probability of discharge of psychogeriatric patients with psychiatric function disorders, in order to optimize patient selection for the reactivation programme (chapter two).
2. to estimate the life expectancy of patients having participated in a psychogeriatric reactivation programme as well as to identify prognostic characteristics for survival after discharge (chapter three).
3. to estimate the prevalence and co-occurrences of psychiatric function disorders in psychogeriatric patients suffering from cognitive function disorders at referral to clinical as well as non-clinical (transmural) psychogeriatric programmes (chapter four).

In chapter three, (title ‘Psychogeriatric Reactivation in an Psychiatric-Skilled Nursing Home; a Clinical-Empirical Exploration’) the results showed that 16 characteristics of psychogeriatric patients and caregivers, belonging to four dimensions i.e. Cognitive function disorders, Psychiatric function disorders, Caregiver system and Somatic co-morbidity had potential prognostic qualities for probability of discharge after participation in IRR programme 1.

In chapter four, (title ‘Life Expectancy Following Psychogeriatric Reactivation’) a preliminary prognostic model for survival after participation in IRR programme was presented. Six characteristics of the psychogeriatric patient as well as the caregiver – distributed over the same four dimensions i.e. cognitive function disor-
ders, psychiatric function disorders, caregiver system and somatic co-morbidity - were relevant factors in the prognostic model. This model performed relatively well; about 30% of the variance was explained. Another clinically relevant finding was that the prognosis of psychogeriatric patients who suffer from delirium was bad. So, we decided to exclude patients suffering from delirium from participation in the RCT.

In chapter five (title ‘Prevalence of Psychiatric Function Disorders in Psychogeriatric Patients at Referral to Nursing Home Care – the Relation to Cognition, Activities of Daily Living and General Details’) the prevalence and co-occurrences of psychiatric function disorders in psychogeriatric patients who suffered from cognitive function disorders are presented. The psychiatric function disorders were measured by the neuro-psychiatric inventory (NPI) at the moment of intake, and administered to the caregiver.

The prevalence of NPI-symptoms was high, in that about 90% of the referred psychogeriatric patients, still living at home, had one or more NPI-symptom, about 80% two or more. These percentages of psychogeriatric out-patients were higher than those of patients within nursing homes; in the latter setting about 70% patients suffer from one or more NPI-symptoms. The most important NPI-symptoms were depression, apathy, anxiety and agitation/aggression. Clinically relevant was the finding that NPI-symptoms constituted a dimension on their own, different from cognitive function disorders as measured by MMSE (memory) and BI (self care). We argued that the NPI-symptoms could be/might be considered as an expression of psychiatric pathology. In a replication study (attached as a supplement to this dissertation) we identified the same dimensional structure in a population of patients at the moment of referral to a memory clinic.

In the RCT study we addressed the following five research objectives:

1. To test in terms of mean differences the effectiveness of IRR compared to usual multidisciplinary nursing home care (UC) to reduce multiple psychiatric symptoms in psychogeriatric patients and caregiver burden (chapter six).
2. To identify and estimate, whether beneficial long term effects of IRR on severity of multiple psychiatric symptoms of psychogeriatric patients and general burden of caregivers were modified by level of cognitive function disorders and/or type of dementia (chapter seven).
3. To evaluate long term benefit of IRR compared to UC in terms of percentages of clinically relevant improved psychogeriatric patients and caregivers and numbers needed to treat (chapter eight).
4. To identify prognostic factors for a favourable long term effect of IRR for psychogeriatric patients and caregivers on five selected outcome variables as well as to explore the performances of three decision rules (chapter nine).
5. To assess cost-utility as well as cost-effectiveness on six selected outcome variables of IRR compared to usual care (chapter ten).
In chapter six (title ‘Integrative Psychotherapeutic Nursing Home Programme to reduce Multiple Psychiatric Symptoms of Psychogeriatric Patients and Caregiver Burden; a Randomized Controlled Trial), from the perspective of the caregiver the results showed that, at the end of the integrative psychotherapeutic nursing home programme, IRR had a significant and moderate to large beneficial surplus effect in curtailing the number and severity of multiple psychiatric symptoms (MPS) of the psychogeriatric patients who suffer from cognitive impairment or dementia. Compared with UC, the patients in the IRR programme had up to 34% more reduction in their symptoms. Furthermore, IRR had a specific beneficial effect on hyperactivity. In addition, IRR had a large surplus beneficial effect on burden and the reported competence of the caregivers. Compared to UC, the caregivers in the IRR programme had up to 36% surplus beneficial effects. At six months follow-up, the surplus effect on multiple psychiatric symptoms of the patient remained. At this time, the effect on the burden of the caregiver appears to have increased: in the IRR condition burden had reduced up to 50%, while in UC there were no changes in the reported burden.

In chapter seven (title ‘Effect Modification of Integrative Psychotherapeutic Nursing Home Programme to reduce Multiple Psychiatric Symptoms of Psychogeriatric Patients and Caregiver Burden; a Randomized Controlled Trial) it turned out that neither cognitive functioning (MMSE and BI-score) nor the type of dementia (vascular and Alzheimer) modified the effects of IRR. This means, that the surplus effect of IRR versus UC was beneficial for a wide group of psychogeriatric patients and caregivers who suffer from the two as most problematic experienced items in dementia care i.e. psychiatric symptoms and caregiver burden. Maybe, a broader range of patients i.e. (psycho)geriatric patients suffering from a lower level of cognitive functioning (MMSE ≥ 12 instead of ≥ 18) and/or different types of cognitive disorder (CVA or a post-crash syndrome) can also benefit from the IRR programme.

In chapter eight (title ‘Benefit of Integrative Psychotherapeutic Nursing Home Programme to reduce Multiple Psychiatric Symptoms of Psychogeriatric Patients and Caregiver Burden after Six Months Follow-Up; a Randomized Controlled Trial’) the results show that at the end of six months follow-up in IRR a significant and clinically relevant percentage (40%) of the psychogeriatric patients with hyperactivity improved and a small number needed to be treated (NNT: four). In addition, the same applies to the percentage (36%) of caregivers who improved on competence (NNT: five). Overall, at six months follow-up, for patients and caregivers who fully completed the IRR programme the likelihood to improve on multiple psychiatric symptoms, on caregiver burden as well as competence, was considerably higher in IRR than in usual care. For psychogeriatric patients the ORs varied from 2.80 to 3.46 and up to 76% patients improved. The ORs for caregivers varied from 2.40 to 4.18 and up to 71% caregivers improved.
Regarding prognostics (chapter nine: title ‘To Identify Prognostic Factors for a Favourable Long-Term Outcome of Psychogeriatric Patients and Caregivers Following an Integrative Psychotherapeutic Nursing Home Programme to reduce Multiple Psychiatric Symptoms of Psychogeriatric Patients and Caregiver Burden; a Clinical-Empirical Study’) it turned out that prognostic modelling for the chance of improvement on five outcome variables was feasible i.e. on severity of multiple psychiatric symptoms of the psychogeriatric patients, on burden and competence of the caregiver, and on cognitive function disorders (memory and self-care). More specifically, on severity of multiple psychiatric symptoms of the patients and on competence of the caregiver the performance of the prognostic models was substantial, albeit on burden of caregiver and on cognitive function disorders (memory and self-care) the performance was low. The inclusion of a broader range of psychogeriatric patients i.e. lower or higher scores on MMSE or BI, in combination with specific interventions to enhance cognitive functioning seems justified.

From the perspective of optimizing medical decision making, we explored the performance of three decision rules. The first decision rule (highest Mean Average-rule) is aimed to calculate the average percentage improvement in either intervention. The second rule concerns to minimize the maximum possible loss (‘MINIMAX’-rule); this latter rule attempts to avoid the risk of missing benefit by comparing the highest difference between the interventions on each score over all outcome variables; than choose for the intervention with the lowest loss of benefit. The third decision rule concerns the ‘MAXIMIN’-rule which implies that the patient will be assigned to the intervention with the lowest level of avoidable risk by comparing the difference between the interventions of the lowest score on all outcome variables. Applying these three rules on the expected improvement at six months of follow-up resulted all three into IRR as indicated as best treatment.

In chapter ten (title ‘Economic Evaluation of Integrative Psychotherapeutic Nursing Home Programme to reduce Multiple Psychiatric Symptoms of Psychogeriatric Patients and Caregiver Burden; a Randomized Controlled Trial’) we have undertaken an economic evaluation of IRR programme based on all relevant costs due to medical resource utilisation at 40 weeks. However, non-medical costs and costs of caregivers were not included in the analyses. Regarding cost-utility on QALYs no significant differences were found, while total medical costs of patients in IRR were significantly higher. It has to be noted that, in case of surplus costs of IRR, a probable discount due to non-medical costs as well as to diminished caregiver costs was not taken into account. With respect to cost-effectiveness, patients and their caregivers who fully participated in the programme improved in IRR significantly more on mean scores i.e., on severity of multiple psychiatric symptoms of the psychogeriatric patient, on general burden of the caregiver, and on competence of the caregiver, with ICERS varying from € 130.-- to € 540.--. The large discrepancy between QALYs and ICERS, as well as to the relatively irresponsiveness of EQ5D to clinically relevant change, found in this study on psychogeriatric patients who suffer from cognitive impairment or dementia, may mean a drawback in cost-utility
studies in psychogeriatrics. It demands further research on the validation and value of EQ5D in psychogeriatric studies. Another issue for further research is, that we found that irrespective of type of intervention the improved patients were responsible for higher medical costs. A reason may be that they lived longer (see chapter 4). All in all, the surplus costs of IRR are considered acceptable when the beneficial effects were taken into account on the high societal costs of suffering from multiple psychiatric symptoms of psychogeriatric patients and high burden of caregivers. To optimize the cost-utility and the cost-effectiveness of IRR, the construction of a tool enabling to identify suitable psychogeriatric patients and caregivers for IRR is of highly clinical interest. Such a tool contributes to optimize medical decision making on an economic evaluation.

3. Methodological issues

In this paragraph the strengths and limitations of respectively the case study, explorative-observational, and RCT studies will be discussed. The major strength of the case study was the detailed information about the content and feasibility of the reactivation process. It illustrated the potential beneficial effect of a multidisciplinary and integrative psychotherapeutic nursing home programme, based on a person-oriented and problem-solving theoretical framework. In the explorative, observational studies the clinical and scientific relevance of a multidimensional approach comprising the dimensions ‘Cognitive function disorders’, ‘Psychiatric function disorders’, ‘Caregivers system’ and ‘somatic co-morbidity’ nicely emerged from the results. In addition, the observational studies showed that psychogeriatric patients who suffered from delirium may not benefit from IRR. Furthermore, it became clear that most psychogeriatric patients suffer from multiple psychiatric symptoms. In the explorative, observational studies the sample size of available patient data and participating patients and caregivers was relatively high. The positive findings of the explorative studies warranted to carry out an RCT. In our RCT the sample size of participating patients and caregivers was relatively large compared to other intervention studies. According to our knowledge this RCT is one of the first that addressed the effectiveness of multidisciplinary and integrative psychotherapeutic treatment in a nursing home setting. Multidisciplinary care including psychotropic drugs treatment is available in many nursing homes, especially in the Netherlands. However, the results of this RCT underline the surplus value of psychotherapeutic know-how – based on problem-solving principles - in treatment and care of psychogeriatric patients suffering from multiple psychiatric symptoms and their caregivers. An important question is which ingredients of IRR were of relevance for the results? In literature the following ingredients are pointed out as crucial factors for beneficial effects in (psycho)geriatrics: Person-oriented, problem-solving based, integrative psychotherapeutic technique combining treatment of patient and caregiver, multidisciplinary approach, optimistic attitude, and methodological rigor.
We think that the IRR programme comprises these crucial ingredients. More attention can be paid to the cognitive aspects, by enriching the IRR programme with explicit cognitive (memory, orientation and self-care) training and support interventions in combination with – if appropriate – the prescription of cognitive enhancers. Furthermore, a broader range of (psycho)geriatric patients may benefit of this second generation of IRR. At last, an improved version of the computerized treatment plan and the GAS-score system would facilitate the performance of the IRR programme by the professionals. Many psychogeriatric patients as well as their caregivers will benefit if cure and care programmes like IRR become available. Moreover, the effect modification study showed that neither type of dementia nor level of cognitive function disorders (MMSE ≥ 18 and BI ≥ 5) had any modification effect on the results regarding severity of multiple psychiatric symptoms of patients as well as general burden of caregivers.

The clinical relevance of the effects of IRR found in the RCT is high, which becomes obvious by considering the top three of experienced problems in dementia in the Netherlands, i.e. psychiatric symptoms, burden of caregiver, and admission to a nursing home. Moreover, psychotherapeutic know-how should become an integrative part of the education programmes of various involved disciplines. The part of the dissertation that focussed on long term benefit, showed that participating fully in the IRR programme enlarged the likelihood to improve for both patients and caregivers. This underlines the need to study possible means to improve non-participation and dropout/withdrawal in psychogeriatric research. This is even more important as it is known that for this group of elderly patients, even in longitudinal observational studies without intervention, the percentage of dropout is generally very high (up to 40%). Basically, it reflects the vulnerability of psychogeriatric patients on the verge of admission to a nursing home. In this study, dropout-patients of both arms did not significantly differ in number, baseline outcome values or in participation period. So, selective dropout between both arms of the RCT is unlikely. The gain in results of IRR compared to UC, when focussing on patients and caregivers who fully participated demonstrated the efficacy of IRR.

The strength of the prognostic part of the dissertation was that the identified models were relatively stable despite the small sample size for this type of study. Moreover, the models showed a substantial performance for severity of multiple psychiatric function disorders of the psychogeriatric patient and competence of the caregiver. Applying the three selected decision rules was another strength of this prognostic part of the dissertation; all three pointed to the same direction and resulted in IRR as first choice. For economic evaluation, the direct medical costs of the patients could be calculated. The influence of dropout on the results and the consequences of different statistical strategies could be shown by comparing different outcome methods, i.e. QALY as well as an ICER (incremental cost effectiveness ratio) outcome approach. In the ICER-results patients and caregivers on IRR showed a discernibly higher likelihood of improvement on clinically relevant outcomes (i.e. psychiatric symptoms, caregiver burden and competence) against higher costs.
Limitations

Which were the limitations of this dissertation i.e. case study, explorative, observational and RCT studies? The single case study (or N=1 study) is conducted without a comparison between pre-/post treatment options. So, it only provides some common sense and clinical logics about the relevance of an IRR programme. However, it is an important first step to enable in the long run to design and conduct a RCT. Drawback of the observational studies was lack of proving effect and causal associations. Despite of that, it can reveal important aspects or induce hypotheses to test in a RCT or design or controlled study.

Regarding the RCT, a point of discussion is generalization of the results. About 50% of the eligible psychogeriatric patients and caregivers refused to participate in the study. Comparatively many of these refusing patients lived with a spouse. The core motive for refraining participation was fear of clinical admission in case of assignment to IRR. Fear of admission to a nursing home is number three of the top three of experienced problems in dementia care in the Netherlands. Therefore, it is of importance to develop a short preliminary (outreaching) programme focussed to diminish the fear for admission. Furthermore, the follow-up period was six months. The beneficial effects for the patients remained and for the caregivers increased. However, it is an important question whether the effects will remain over a longer period of time. Further research is needed.

Another limitation of the RCT was that the research co-workers were not blinded for type of intervention. They had to visit the patients and caregivers personally, so they knew the intervention history of the involved patients. In a clinical study like this blinding was not feasible. Other sources of observer bias or lack of inter-rater reliability were minimized by training the co-workers carefully in properly administering the assessment instruments.

In sum however, the question is relevant whether overall bias distorted the results of this RCT. At baseline there was only one significant difference (somatic co-morbidity) between both arms. Even between dropouts there were no significant differences. Moreover, in the RRM-analyses, adjusting for baseline value and dropouts, the results were in line with the unadjusted Cohen’s-d analyses. All in all, in our view it is unlikely that the results of the RCT were biased, but an effect of unblinded assessment cannot be excluded.

With respect to the results on the primary outcome variable using the NPI (mean differences, RRs [including NNTs] and ORs) the clinical relevance of the findings can be presented in continuous data as well as dichotomous data. There is a lot of discussion about the issue of the magnitude of an effect to be regarded as clinically relevant. De Vet and Norman advise a half of a standard deviation as a minimally clinically relevant change in health care studies. However, there is not much literature available about the minimal clinically relevant change in NPI scores, apart from the articles of Cummings himself. More research is needed on this issue. However, the surplus effect of IRR found in the RCT was relatively large with respect to mean differences as well as percentages of patients and caregivers who improved 30% and over.
Another issue that needs to be discussed is the differences in scores between the NPI administered to the nurse of a nursing team compared with those to the caregiver. The trend of both scores was the same and the Pearson correlation was significant and increasing over time (at T3 $r=0.48$; df=93; $p<0.001$). How can the difference in NPI-score be explained? First of all, the caregivers formed a stationary group from the moment of inclusion until end of treatment and six months follow-up. In addition to the information they received from the nursing team, caregivers also have supplementary information, because they have more long lasting individual contacts with the patient. In general, according to literature their opinion corresponds more with needs, thoughts and feelings of the patient. In contrast, the data of the nursing team were discontinuous in both arms; the researchers had to ask different nurses of a nursing team for NPI-data. So the question is to whom the NPI has to be administered to collect adequate data about the multiple psychiatric symptoms of the patient. To the nursing team, the caregiver or both? This is an important issue to address in future research projects. However, the caregiver NPI showed to be very responsive to changes in number as well as severity of psychiatric symptoms. In any case, we recommend always to collect also data from the caregivers.

In both study groups, on the EQ5D just small changes could be estimated. Moreover, in both groups, relatively small numbers of psychogeriatric patients as well as caregivers improved on the EQ5D. The EQ5D instrument showed a relatively low responsiveness, compared to the clinically important instruments i.e. NPI, CB and CCL. The low responsiveness of EQ5D in this RCT did put a constraint to the cost-utility analysis in terms of QALYs. This finding confirms the results found in literature about the relation between quality of life measures and measures of psychiatric symptoms like NPI; specifically by Ballard, Katona and Wimo. An adapted (‘proxy’?) measurement instrument which can be used for cost-utility research in psychogeriatric patients is urgently needed. Another limitation of the cost-utility and cost-effectiveness study was that costs included only direct medical costs of the patient. Other patients costs, all caregiver costs, and any profits were not taken into account. The development of a more comprehensive approach is recommended. In sum, the strength of the evidence and recommendations of this RCT can be evaluated as moderately strong according to the GRADE approach (Grading of Recommendations Assessment, Development and Evaluation) of the Cochrane Collaboration and taking into account the above mentioned limitations.

4. Implications for professionals, managers and policymakers

Looking for the implications of the findings of the dissertation for professionals, we advise to address the implementation of psychotherapeutic know-how in usual psychogeriatric care and in education programmes of professionals e.g. nursing,
physician, psychologist, physiotherapist, occupational therapist, social worker and so on. There is no need to do more, but rather to do different things i.e. person-oriented and psychotherapeutic problem-solving based interventions. Furthermore, research on the optimal implementation strategy for implementation of IRR is of relevance to enable a widespread application of IRR. In addition, it is of clinical relevance to develop a second, cognitively enriched generation of IRR, including a prognostic tool to optimize the interventions to reduce multiple psychiatric symptoms in general as well as more specific psychiatric symptoms of psychogeriatric patients and burden of the caregiver. As stressed by the outcome of the National Dementia Programme in the Netherlands, there is a high level of suffering on both the psychiatric aspects of the patient as well as burden of the caregiver. The latter suffers from high levels of disabilities and loss of well-being; up to 80%. Regarding professionals, to have access to psychotherapeutic strategies, based on a problem-solving theoretical framework as well as a person-oriented approach will enable them to optimize their skills in order to get better results. This will make it more attractive to become a professional worker in this particular domain, which is of great socio-economical importance looking at demographic developments.

With respect to research like the ZonMw programmes, especially the National Programme for the Elderly (NPO), an important implication is to address the development of responsive quality of life instruments, which correspond with other clinically relevant outcome measures. The issue of the appropriate measurement of quality of life of (psycho)geriatric patients, suitable for the evaluation of the cost-utility of interventions (QALYs), should be solved and deserves high priority. Furthermore, the problem from whom the patient data of the multiple psychiatric symptoms have to be derived from (the psychogeriatric patient him-/herself, the nursing team and/or caregiver), urgently needs to be solved. In addition, the development of a comprehensive economic model, including all relevant costs and profits, to evaluate intervention programmes from an economical perspective is another important item for future ZonMw research programmes. From an international perspective and according to the evidence available from this RCT and literature reviews, intervention studies of multiple psychogeriatric symptoms in psychiatric patients preferably should comprise integrative psychotherapeutic interventions as part of the index interventions or as part of the control interventions; even so in pharmaceutical studies.

For both managers and policymakers it is interesting that, in general, improvement either in usual nursing home care or in IRR was more cost expensive than non-improvement. As in the worst case scenario IRR was just about € 53.-- more expensive than usual care, which is about half the costs of a CVA-unit (€ 102.--) the implementation of IRR should be facilitated e.g. by adaptation of the financial package linked to the weight of care; called in the Netherlands “ZZPs”. Especially ZZP-9, which is now predominantly directed on somatic rehabilitation, should
be made suitable for rehabilitation and revalidation of multiple psychiatric symptoms of psychogeriatric patients as well as on burden of the caregiver. Within this context, it is of relevance to join the promising development to position the “Geriatric Revalidation” outside the AWBZ.

With respect to ZZPs it is also important to realise that an actual ZZP-classification of a psychogeriatric patient not automatically fits the needs and demands for psychotherapeutic care and treatment to relieve the suffering of the patient and the caregiver. Patients with a wide range of ZZPs were eligible for IRR according to the inclusion criteria. Moreover, the correlation between ZZP-7 (active psychiatric disorder) and actual NPI scores was minor. We recommend to register and manage this discrepancy, in order to clarify the consequences for daily practice as well as governmental care politics. As the next step the development of a specific, evidence based prognostic tool, is a feasible goal. In our opinion, policy makers have to decrease the current gap between the economic-oriented ZZP-classification system and the robust clinical assessment instruments, used for inclusion of patients in tailor made treatment and care programmes. We recommend managers and policy makers to focus on the content and methodological aspects of psychotherapeutic treatment and care of psychogeriatric patients and their caregivers, in order to integrate them with the usual financial and management control topics. Finally, specific attention is needed for improving the quality of care in chronic nursing home care with respect to the treatment of multiple psychiatric symptoms of psychogeriatric patients, though in the RCT usual care – mostly emotion-oriented - showed already a mean 30% reduction of the complaints. More reduction in chronic nursing home care seems possible by applying (partial) techniques of IRR. E.g. in nursing home care we successfully introduced the concept of ‘behaviour consultant nurse’, who is educated to perform the nurse-diagnostic and psychotherapeutic interventions derived from the IRR programme. Furthermore, the burden of caregivers can be considerably reduced by using the different family therapy techniques of IRR. Of course, these developments need further scientific evaluation.

5. Recommendations for improvement of IRR

What are the possibilities to enhance the beneficial effects of IRR?

Based on the studies we performed we concluded that effects of IRR are already beneficial, but still can be improved. First of all, a preliminary programme should be developed to diminish the fear for admission. Another recommendation is to develop a powerful prognostic logarithm to optimize clinical decision making to admit psychogeriatric patients and caregivers with a high chance to profit from IRR. With respect to the IRR-programme itself, more attention is needed for cognitively enriched interventions, differentiation between short and long duration of IRR, especially regarding personality disorders and development of more specific interventions protocols to common psychiatric symptoms like depression, anxi-
enty and apathy are important issues. Moreover, a more comprehensive outpatient follow-up programme is needed to enhance the treatment results. In addition, a large scaled blinded RCT should be designed and conducted with a broader study sample. The objectives to identify the most important therapeutic elements of a second generation of IRR and on the other hand to construct robust prognosticum in order to compress the IRR programme into a less complex intervention for a specific target group of cognitive impaired patients. As a consequence, IRR may become more cost effective.

6. General conclusion

In this dissertation the development and testing of a psychotherapeutic nursing home programme (IRR) to reduce multiple psychiatric symptoms of psychogeriatric patients who suffer from cognitive impairment or dementia and caregiver burden is evaluated. In general, from the perspective of the caregiver the surplus effects of IRR were significant of a moderate to large size. After six months follow-up the effects on the psychogeriatric patients were stable and on the caregiver even enlarged. From the perspective of the nursing team, the results were insignificant, though pointed to the same direction and were significantly and increasingly correlated over time. The extra costs of IRR were acceptable and the numbers needed to treat were low (four to five) compared to donepezil (=10) and to memantine (=3-8). Moreover, the favourable effects were not modified by type of dementia or level of cognitive functioning. However, because of the methodological issues the results have to be interpreted cautiously. According the GRADE approach the strength of the recommendations can be evaluated as moderately strong. The findings presented in this dissertation may inspire to further scientific research to reduce multiple psychiatric symptoms of psychogeriatric patients who suffer from cognitive impairment or dementia, and burden of the caregivers. In order to relieve the suffering of psychogeriatric patients and their caregivers, professionals, researchers, managers and policy makers have to address the implementation barriers for psychotherapeutic treatment inside and outside nursing homes e.g. integrative psychotherapeutic training programmes, quality of life research, person-oriented and content-oriented management and modification of the ZZP-classification system.

As 80% of psychogeriatric patients suffer from multiple psychiatric symptoms and 70-80% of caregivers are moderately to heavily overburdened, the implementation of integrative psychotherapeutic treatment based on a problem-solving theoretical framework as well as a person-oriented approach is urgent. Future studies have to be performed to strengthen the evidence, preferably as blinded RCTs with a long follow-up period.
References


