

An exploration of how long-term preventive home visits
affect older persons' health and possibility for a good life
in their own homes

Users' and service-providers' perspectives

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Två sanningar närmar sig varann

En kommer inifrån

En kommer utifrån

Ock där de möts har man en chans

Att få se sig själva

Tomas Tranströmer.

Svensk poet, författare og psykolog. Nobelprisiinner i litteratur

Abstract

Preventive home visits (PHV) is health care services to independently living older persons, which aim to promote health, prevent disease and functional decline, and uphold older persons' ability to stay in their own homes. The first PHV services were developed in Denmark and UK more than 50 years ago, while the first Norwegian municipalities introduced PHV in the 1990's. Currently, most western countries offer variants of PHV, and the expected demographic changes have led to an increased interest in these services. In 2013, 25% of Norwegian municipalities offered variants of PHV, but the interest is rising due to governmental encouragement.

Before this study, no Norwegian studies on PHV were found. International researchers had made several systematic reviews based on RCTs to assess effects of PHV and define characteristics related to successful services. These studies demonstrated that PHV may improve several health related aspects, but failed to produce recommendations for how to design and carry out effective PHV services. Consequently, other research methods were called for to produce more in-depth knowledge about PHV. A widespread PHV model in Scandinavia is to offer annual visits to a general population of older persons. Studies that explore the experiences and opinions of those involved in PHV services might provide information on what is going on in these visits, and what contribute to benefits for the users.

The main aim of this PhD study was therefore to explore how long-term preventive home visits affect older persons' health and possibility for a good life in their own homes. The study was based on a comprehensive understanding of health and health promotion. We studied a Norwegian PHV service where ten experienced nurses had offered annual home visit to home-dwelling older citizens for more than ten years. The study applied an explorative case study design with a multiple methods approach, comprising three sub-studies. Study one had a qualitative, hermeneutical approach using individual research interviews, and explored ten PHV users' perceived benefits from the service after six or more years of follow up. Findings from this explorative study were used to develop a questionnaire, which subsequently was applied in a quantitative cross sectional survey. In this second study, a representative sample of 161 PHV users with experience from two or more visits evaluated the service, answering questions about the perceived benefits defined in study one. The study also explored if perceived outcomes of the PHV service varied according to socio-demographic or health

related factors. The third study explored the nurses' experiences of benefits from long-term PHV follow-up, and their perspectives on what was important for the creation of benefits in a long-term perspective.

The study have identified outcomes from PHV that older persons judged as valuable. The service providers supported the users' striving to maintain themselves as persons, and provided personally tailored support that added to older persons' feeling of safety, their perceived self-worth, their ability to manage everyday life and to live good lives in their own homes. The survey confirmed that many PHV users shared these benefits and valued the service highly. Socio-demographic and health related conditions had only minor impact on perceived outcomes of PHV, and we found no support for restricting the service to special subgroups of older people. The study of the nurses' perspectives confirmed that the PHV offered individualised, longitudinal support that could lead to a variety of benefits for the users and contribute to sustained ability to live independently and thrive in own home despite age-related changes. The study also illuminated complex relational and professional processes and structural and contextual factors involved in creating benefits for the users.

In case studies, convergence of evidence from the sub-studies can give an extended understanding of the research aim. Findings across the studies supported a comprehensive understanding of health and health promotion when designing effective and helpful PHV, and when evaluating such services. A synthesis of objective health as absence of disease, subjective health as well-being, and health as a resource for coping and a good life open for a broad repertoire of preventive and health promotive strategies necessary for individual targeting of the service and supporting each user's needs and valued goals. Findings across the sub-studies have also resulted in a model illustrating the factors that influenced the creation of benefits from the long-term PHV service. Finally, the knowledge gained through this PhD study and relevant literature have resulted in a generalised model to guide implementation, further development and evaluation of PHV services. The knowledge are relevant in Norway and other countries with similar health-care systems and socioeconomic conditions.

The knowledge from this PhD thesis can support decisions about PHVs, and inform development of effective PHV services that support older persons' possibilities for a long and good life in their own home, which is important from each older persons' point of view, from a public health perspective and from a socioeconomic perspective.

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List of Papers

1. Tøien, M., Bjørk, I. T., & Fagerström, L. (2015). Older Users' Perspectives on the Benefits of Preventive Home Visits. *Qualitative Health Research*, 25(5), 700-712. DOI:10.1177/1049732314553595
2. Tøien, M., Bjørk, I. T., & Fagerström, L. (2017). An exploration of factors associated with older persons' perceptions of the benefits of and satisfaction with a preventive home visit service. *Scandinavian Journal of Caring Sciences*, DOI: 10.1111/scs.12555
3. Tøien, M., Bjørk, I. T., & Fagerström, L. A longitudinal room of possibilities – perspectives on the benefits of long-term preventive home visits. Submitted to *BMC Health Services Research* June 2018

Abbreviations

ADL	Activities of daily living
APN	Advanced Practice Nurse
DN	District nurse
GP	General Practitioner
HHC	Home health care
LOS	The life orientation scale
MGA	Multidimensional geriatric assessment
O3SSS	Oslo 3 social support scale
OT	Occupational therapists
PHV	Preventive home visits
PT	Physiotherapists
RCT	Randomized controlled trials
RN	Registered Nurse
SF 36	Short Form (36) Health Survey
SLR	Simple logistic regression
MLR	Multiple logistic regression
WHO	World Health Organization

1 Introduction

The topic of this thesis is experiences with annual preventive home visits (PHV) to a general population of older persons in a Norwegian municipality. The international term PHV covers a broad variety of services, but in this study, PHV is understood as a comprehensive outreach health service to home dwelling older people intended to promote health and independence, prevent disease and postpone or reduce functional decline (1, 2). Such services may include the use of health promotive as well as disease preventive strategies. The aim of preventive home visits thus correspond with the fundamental responsibilities of nurses: to promote health, to prevent illness, to restore health and to alleviate suffering (3). Nurses are among the most frequently used employees in PHV services internationally (4), and in Norway (5).

The majority of older people want to age in their own home (6, 7), and the home is strongly related to older peoples' identity and sense of meaning (8). Function friendly surroundings, good coping capability, sustained health and functional ability are essential if older people are to remain independent in their own homes (9, 10). Most people in western countries, including Norway, enjoy a strong health that allows them to live good and independent lives into advanced age. However, considerable socioeconomical differences in life expectancy, health and disease exist among the older population (11-13). The biologic aging process inevitably leads to successive decline in a broad array of bodily functions, for instance hearing and vision, bone density, immune system and kidney function. In sum, this makes older people vulnerable, and the incidence of disease and functional decline that leads to suffering and dependency thus increases as people age (14, 15).

The disease related reduction in Norwegian older persons' health and functional ability is mainly a result of long-term conditions, often in combinations, such as cardiovascular diseases, musculoskeletal diseases, diabetes 2, chronic obstructive lung diseases, cancer, minor mental disorders and dementia (13). Infectious diseases, predominantly influenza and pneumonia, may result in acute worsening of older persons' health situation that might lead to acute hospitalization, and even deaths among older persons (16, 17). Furthermore, falls are common among older home-dwelling persons, which often result in fractures. In addition to acute hospitalization, in particular hip fractures contribute to increase the risk of functional decline and long-time institutionalization among older persons (18, 19). To reduce morbidity,

and sustain and improve the aging population's health and functional ability is thus a major goal for the health services.

To improve older persons' ability to stay independent is also a socioeconomic goal. All developed countries will experience demographic changes within the next decades with a relatively steep increase in proportion of older inhabitants, particularly the oldest old (85+) and a decrease in proportion of the younger parts of the population (20). An ageing population is a proof of success of socioeconomic development and public health work. On the other hand, *how* the future populations of older people age, will have crucial impact on a society's ability to meet the challenges of population ageing. A main concern is that increasing life expectancy will result in a longer period of morbidity and dependency (20, 21). If today's level and system of health care is to be continued, this scenario will demand an extensive escalation of health care services and need for health care personnel causing an immense burden on the diminishing younger part of the society (22).

On the other hand, an increasing amount of research evidence shows that it is possible to prevent disease and injuries, strengthen older persons' health and thus reduce or delay functional decline (23-27). In sum, these strategies may lead to increased life expectancy followed by an even longer postponement of disability and fewer functional limitations (23). This 'compression of morbidity paradigm' will result in a longer period of independence and a shorter period of need for health care services, and thus reduce the burden of the aging process both for the aging persons and the society (21, 23). A precondition for effect of these initiatives is early contact and assessment of older persons' health status and situation because many older persons first contact the health care system when symptoms of declined health have grown serious (28-30). To enhance this scenario, health promotive and disease preventive efforts are required (20, 21, 31, 32).

Even so, many older persons will eventually experience decreasing health and functional limitations that threaten their quality of life and ability to live independently. A complementary approach to a focus on the persons is to adjust the persons' environments in order to compensate for those limitations ageing and disease lay on older people. Tailored home modification and provision of assistive devices can improve disabled older persons' function and coping ability, and extend their capacity to live independently (33-38). Timely and skilled assessment and offer of these services are therefore important for older home-dwelling persons as well as the society.

Many western countries including Norway have realized the need for health care reforms that encourage health promotive and disease preventive initiatives to meet the challenges of an ageing population (39-42). One such initiative is preventive home visits.

PHV were pioneered more than 50 years ago in Denmark and Scotland and various PHV-services are currently implemented in most western countries (43). In Norway, the first PHV services were initiated in the late 1990s. The proportion of municipalities offering PHV has gradually increased to 25 % in 2013, and the interest is rising (5). A lack of evidence-based guidelines for how to design and realise such multifaceted services, have led to substantial heterogeneity within PHV interventions internationally and in Norway. This includes variations concerning target population, aim, scope, service providers' profession and competence as well as content, structure and follow-up strategy (4, 44-46). Reviews of the literature have revealed that few international PHV programs actually focus on health promotion (4, 47). However, in Norway, the majority of PHV services have a main focus on health promotion. Approximately half of Norwegian PHV services offer repeated visits, the rest offer single visits (5).

It is challenging to measure effects of health promotive and preventive initiatives because of their multifaceted, complex and long-time nature. Despite this, during the last two decades researchers have published several reviews of studies on PHV interventions, mainly randomized controlled trials (RCTs), see for example: (44, 47-50). These RCTs measured objective outcomes defined by researchers or health authorities, mainly with regard to biomedical outcomes such as morbidity and mortality, or socioeconomic measures such as health care expenditure and hospital- or nursing home admissions. Differences in health care systems, samples and outcomes as well as heterogeneity in interventions and insufficient intervention descriptions in these RCTs produced conflicting results (48, 51). Still, the potential to improve some health related dimensions seems evident. Some agreement exist for recommending professional service providers/visitors, comprehensive focus and multiple visits, but RCT's are neither adequate nor sufficient to give recommendations for how to carry out these multifaceted interventions. Instead, they asked for more complex evaluations and qualitative research to gain a deeper understanding of the content of, and the processes involved in these interventions, and to better understand what contributes to positive outcomes (44, 46, 52, 53). Qualitative studies can also explore if other outcomes may be relevant than those focused on in most RCTs.

A growing acceptance exists among researchers and national authorities that the receivers of health care services are essential sources of knowledge, and that researchers should incorporate their experiences, opinions and perceptions in evaluations (54-59). In order to understand the processes involved in PHV, also the service providers' perspectives are necessary. WHO European working Group on Health Promotion recommended to include the perspectives of those with direct interest in a health promotive initiative, and the Norwegian government particularly calls for research that brings to light the experiences of service providers as well as recipients of PHV (46, 53). Before our study, we found surprisingly few studies in relevant electronic databases reporting service providers' experiences of conducting PHV, or reporting older people's experiences of receiving long-term PHV or evaluations of PHV, and no articles exploring which outcomes PHV users perceive as being valuable.

In Norway, many municipalities plan to introduce PHV, and municipality authorities need knowledge about various models to make informed decisions. The authorities in one of the first municipalities in Norway to introduce PHV wished to evaluate this healthcare service after more than ten years of experience with nurses offering annual visits to the general population of older citizens. They wished to know which results the service accomplished, and how to run the service in the future. They also wished to know if there were differences in PHV users' experiences that could legitimize an adjustment of the service provision. The Faculty of Health Sciences at the University College of Buskerud accepted the municipal authorities' request to undertake the evaluation, because this well-established PHV service was a suitable case for research that could extend the knowledge base for PHV. To be able to answer the different questions, a case study evaluation was decided. This study, which describe PHV providers', and receivers' experiences related to benefits of the long-term PHV service, is part of this evaluation. The main aim of this PhD study was to explore and describe how long-term preventive home visits affect older persons' health and possibility for a good life in their own home.

2 Background

2.1 Preventive home visits

Based on a review of the literature, this section will in short describe what the concept of PHV comprises, the dispersion of PHV and the reported knowledge of effects and other aspects of PHV interventions. Relevant databases¹ were systematically searched for articles on PHV² in October 2010, with updates in June 2013, February 2015, June 2017 and April 2018. We also performed unsystematic searches with a special focus on PHV in Scandinavia. We found a large number of references, the majority related to RCTs, and only few qualitative articles. The presented knowledge on PHV at study start was extracted from systematic reviews and other literature on PHV published before October 2010, while the knowledge after study start comprise literature published between October 2010 and April 2018.

2.1.1 What is PHV

The concept of PHV covers a plenitude of different interventions, but shared features are provider-initiated outreach health services to home dwelling older people intended to enhance their ability to stay independent. The Service providers apply various strategies to promote health and independence, prevent disease and postpone or reduce functional decline (4, 60, 61). The large variety that exists in PHV services is a result of the emerging, “bottom up” way of how these services were established. Enthusiastic individuals, often General Practitioners (GPs), but also RNs, occupational therapists (OTs) or physiotherapists (PTs) initiated PHV services within their local health care services. Consequently, different professional interests and ideologies and dissimilar health care systems resulted in interventions with various aims, priorities, methods and target populations (43, 45, 62).

A closer reading of the systematic reviews on PHV before study start revealed extensive heterogeneity of the included interventions within each review as well as between the reviews. Table 1 displays the main characteristics of the reviews (Appendix 1). The included studies were from a variety of countries representing different health care systems. Very few studies were from Scandinavia and none from Norway. The breadth and comprehensiveness

¹ Medline, PubMed, CINAHL, Embase and Psycinfo

² Including home visit services/interventions with other names but with comparable aims and target group

of PHV services varied from single item interventions to comprehensive and multifaceted programs (44, 50, 63). The target population could be various segments of older persons from 65 to the oldest old, the general community population or special subgroups of the older population such as frail or disabled older people, people who had fallen or war veterans (51).

RNs or other health care professionals with or without special training performed the majority of the visits. GPs or laypersons were involved in some interventions. Visitors from different professional groups could cooperate in more or less structured ways or form multidisciplinary teams (44, 60). The frequency of the visits varied from a single visit to intensive interventions with several visits each month, but often once or twice a year. The duration of the interventions varied from three months up to a maximum of 54 months, but most typically between one and three years (44).

The content, and how the visitors actually delivered these interventions were generally poorly described (51, 64). The majority of the interventions had a disease preventive focus. These aimed to identify and alter risk factors for diseases, such as smoking, sedentary living, high blood pressure, or detect and treat medical conditions known to generate functional deterioration among older people such as diabetes and arthritis. Some interventions also included prevention of accidents and falls. The English term 'preventive home visits' does not clearly include a health promotive perspective, and an integrative review confirmed that the focus on health promotion was lacking in the majority of the included PHV interventions (47). However, also interventions that included health promotive initiatives such as support for quality of life, empowerment, autonomy, coping, and user and caregiver well-being were reported (4, 64).

The majority of the interventions applied a multidimensional geriatric assessment (MGA) instrument, but theme guides were also frequently used to structure the conversation during the visits (4, 49, 60). Few intervention reports described what the visits resulted in. Although positive outcomes of the PHVs mainly depends on what the older persons actually do as a result of the visits (64), participant adherence was in general inadequately described (4, 49, 51). Outcomes measured in PHV interventions varied. Among the most frequently included were mortality, various measures of morbidity and physical functioning, falls, nursing home - and hospital admissions, and various cost estimates. Very few interventions measured positive health outcomes and patient satisfaction with the services.

2.1.2 Where do we find PHV

PHV were pioneered by GPs in Great Britain and Denmark during the 1960s. Positive effects on older persons' health and independence from early PHV initiatives (65-67) contributed to dispersion of these services during the next decennials. The growing awareness of upcoming demographic changes have further augmented interest in PHV (68). Currently, most countries in Western Europe including the Scandinavian countries, Canada, USA, Australia, New Zealand, Japan and Hong Kong have implemented various PHV services. Despite encouragement for such initiatives in national health strategies, PHV services are often not implemented nationwide (43). As far as we know, three exceptions are Denmark, Australia and Japan. In Denmark, since 1996 all municipalities are required by law to offer annual PHV to all citizens aged 75 and older (1). Australia legislated assessment of older persons in 1998 (61), and Japan introduced PHV to frail older people in 2000 (69).

2.1.3 PHV in Norway

Norway was hesitant to initiate PHV and the first handful of municipalities introduced PHV in the late 1990s. A national survey in 2004 revealed that only 35 of 434 municipalities (8 %) offered PHV services (46). A second national survey carried out during 2013 showed an increase in implementation of PHV to 25% of the municipalities, including the five largest municipalities, and almost 50 % of the remaining municipalities planned to introduce the service within the next few years (5). Recent policy requests for such initiatives will probably further stimulate the dispersion of PHV (42, 70).

Also in Norway, enthusiastic individuals initiated the first PHV services, most often RNs, OTs, PTs or social workers. These pioneer interventions were said to be influenced by Danish models (46), but the lack of knowledge-based guidelines and various professional interests and competences as well as local adaptation have led to substantial variety in PHV services in Norway, similar to experiences from Denmark (1, 46, 62). The way the PHV services are organized reflects this diversity: 38 % of the municipalities organize PHV as part of the home health care services, 27 % as an independent service, 15% within rehabilitation, physiotherapy or occupational therapy services while 14% offer PHV within a health promotive/healthy living unit (5). Correspondingly, the professionals who perform the PHV differ: 62 % of the municipalities use RNs, 50 % OTs and 35 % PTs. Several municipalities

use a varied mix of these professionals. As opposed to several other countries, medical doctors are hardly ever directly involved in PHV (5).

Of the municipalities offering PHV in 2004, 51% offered a single visit with a more narrow scope while 49% of the services had a comprehensive scope with repeated visits (46). In 2013, 48% offered a single visit and 45 % repeated visits, often annually, but the content and scope of the visits were more similar and comprehensive in 2013 compared to 2004 (5). Safe homes, physical health, living conditions and themes related to independence and functional ability were emphasised in more than 90% of the municipalities. Most of the services were reported to include aspects of health promotion as well as disease prevention, but the majority (94 %) had a primary focus on health promotion combined with support for mastery and safe homes, while only 6 % had disease prevention as the main aim (5).

2.1.4 Knowledge on PHV at study start

Knowledge from quantitative studies

After positive results from the first controlled trials on PHV (65-67), a number of PHV interventions were initiated in different countries and settings, among these several as RCTs. We could not find any Norwegian trials. The first systematic reviews on effects of PHV were published in the beginning of the new millennium, and in October 2010, we found 13 systematic reviews reporting on PHV. Table 1 (Appendix 2) shows core characteristics and results from these studies. Table 2 displays the results and conclusions from the reviews in short.

Table 2. Reviews before study start. Results and conclusions.

Reference n trials	Type of review	Results and Conclusions
van Haastregt et al. (2000) 15 trials	Systematic narrative review	Some positive and some negative results in the studies. Concl: No clear evidence in favour of effectiveness of PHV.
Elkan et al. (2001) 15 trials	Systematic review and meta-analyses	Positive effect on mortality and admission to nursing homes Concl: PHV can reduce mortality and admission to long term institutional care
Stuck et al. (2002) 18 trials	Systematic review and meta- analyses	Positive eff on mortality, functional status and admission to nursing homes Concl: PHVs appear to be effective for low risk population if include multidimensional assessment and multiple follow up, more for younger.
Ploeg et al. (2005) 19 trials	Systematic review and meta-analyses	Positive effect on mortality and living in the community Concl: Primary care outreach interventions can reduce mortality and increase likelihood of continued living in the community.
Markle-Reid et al. (2006) 12 trials	Systematic narrative review	Mixed results in the studies. Concl: A diversity of HV interventions by nurses can favourably affect health and functional status, mortality rates, hospital/nursing home admission & costs
Beswick et al. (2008) 89 trials	Systematic review and meta-analyses	Positive effect on mortality, falls and physical functioning, not living at home and admission to nursing homes. Concl: Complex interventions can help older people to live safely and independently. Advice tailoring to individual needs and preferences.
Bouman et al. (2008) 6 trials	Systematic narrative review	No favourable effect on any outcome in all but one of the studies. Concl: PHV appears not to be beneficial for older people with poor health
Huss et al. (2008) 21 trials	Systematic review and meta-analyses	Positive effect on mortality and functional status Concl: Multidimensional PHV may reduce disability burden among older adults when based on multidimensional assessment with clinical examination.
Gustafsson et al. (2009) 14 trials	Systematic narrative review	Mixed results on disability for frail older people. Concl: HPDP are partially effective, more if persons are included in early stages of frailty. Advice interdisciplinary teams and multi-component, complex HPDP
Liebel et al. (2009) 10 trials	Critical literature review	Positive effect on existing disability in 5/10 trials, 2 partly positive. Concl: Recommends visitors with geriatric education and experience, multiple visits, health provider collaboration, multidimensional assessment
Fagerström et al. (2009) 18 trials	Integrative research review	Results on health are mixed. Individualized focus of care in 13/18 trials, a health resource perspective in 8/18 trials. Concl: PHV should respond to individual needs and wishes, and include assessment of risk factors as well as health resources.
Daniels et al. (2010) 48 trials, 19 CGA	Systematic narrative review	CGA + treatment: Positive effect in 9/15 studies. CGA + referral to GP: no eff. 4/4 Concl: CGA followed by treatment and care may prevent disability in frail older people. Advice multidimensional assessment, individualized treatment plan, case management, and long-term follow up.
Beswick et al. (2010) 110 trials (updated rev.)	Systematic review and meta-analyses	Positive effect on not living at home, admission to nursing homes and hospital, fall during follow up, and physical function. Concl: Overall positive eff of complex interventions in helping older people to live at home, mainly by reduced nursing home admission

The included studies in the reviews varied because of differences in inclusion criteria and search strategies (Table 1, Appendix 2). Authors of some reviews judged their included studies to be too heterogeneous (4, 50, 64, 71, 72) or too few (73) to do meta-analyses. The conclusions drawn in these reviews were that some PHV interventions were effective and some not, and addressed a need for more knowledge of factors that might affect effectiveness in these complex interventions. In other reviews, results on shared outcomes were pooled and meta-analyses and meta-regression analyses undertaken to explore if effects were related to certain characteristics of interventions or populations (44, 49, 51, 60, 63, 74).

Because of heterogeneous data and variations in focus for the meta-regression analyses, the results and conclusions from the reviews turned out to be rather inconsistent. However, some agreement across several of the reviews existed, suggesting recommendations for PHV to not too frail older persons (60, 64, 73) undertaken by qualified professional visitors (4, 64, 71). The interventions should be comprehensive (44, 51, 64), include multidimensional assessment (47, 49, 60, 71, 72), long-time follow up (60, 71, 72), and give possibility to target the intervention to individual needs (44, 47, 72).

The last review undertaken by Beswick et al. (51) was by far the most comprehensive and comprised 110 complex interventions, including PHV (Table 2). The meta-analyses showed a small benefit in helping older people to live at home, mainly caused by reduced nursing home admissions rather than deaths, but these benefits were restricted to earlier studies. Younger populations had better physical functioning and more often lived at home than older. Factors *not* systematically associated with improved outcomes were greater multidisciplinary input, direct involvement of physician in the intervention, duration and number of visits and active management compared with referrals or recommendations (51).

The results from the reviews constituted insufficient recommendations for how to design and carry out effective PHV services. To be able to identify the effective components of these complex “black box” interventions, a better understanding of the context, the content and delivery of the visits as well as participant adherence was deemed necessary. Therefore, other approaches including qualitative research were called for (4, 44, 50-52, 60, 63, 64). Already in 1998, WHO recommended to use multiple methods to evaluate health promotion initiatives and to include the perspectives of those with direct interest in a health promotive initiatives (53).

The systematic reviews mainly included outcomes that reflected a negative health perspective with focus on disease, functional decline and mortality, as well as socioeconomic factors. Very few included outcomes related to health promotion and a positive health definition. This could be because many of the reviews and RCTs were initiated by GPs, who traditionally hold a main responsibility towards disease prevention understood as “detecting risks and dealing with them” (60). Several review authors, among them representatives from the nursing profession, questioned the prevailing medical focus and recommended inclusion of other, more health promotive and patient centred outcomes in trials and reviews (4, 47, 51, 63, 64). Clark (52) advised to identify which outcomes older people themselves would select as indicators of effective PHV services.

In addition to studies on effects, quantitative studies have contributed with knowledge on other aspects of PHV. Danish studies described the value of improving the professionals’ competence and cooperation (75), and added understanding of functional decline patterns among older PHV users (76). Studies of older persons who refused PHV in Denmark and Germany found that poor understanding of the aims of PHV reduced acceptance rates (77, 78). Another Danish study found that the PHV invitational procedure had consequences for acceptance rates, and more seniors accepted PHV when receiving an invitation letter with a proposed date and time for the visit (79).

Economic evaluations

Economic evaluation of PHV was included in two of the reviews, (4, 60). In addition to the heterogeneity of the interventions, the methodological quality of economic analyses in the included trials varied and included different elements and measures. Those who reported net cost savings mainly related this to lower use of nursing homes, but it was not possible to make general conclusion related to cost /benefits. The time perspective is important for economic evaluation. Stuck and Kane (45) found that an increased cost the first year was followed by a more than threefold net cost saving in the third year. A recent Swedish PHV intervention study included a cost utility analysis (80). Within a period of four years, they found the intervention to be cost effective, meaning that the costs were justified by the outcomes (80).

Knowledge from qualitative studies.

We found few qualitative studies related to PHV. An evaluation of a Swedish PHV test-model with three annual visits included the views of participants and service providers (81). The participants appreciated information about prevention and activities for seniors, and the help to get assistive aids. Information about where to turn if they needed assistance from the municipality added to their feeling of security/confidence. The service providers' professional competence and being listened to were important for satisfaction (81). A Danish master thesis explored older persons' experiences of PHV and perceived effects on coping in everyday living (82). Positive outcomes depended on whether they received help with perceived important problems. The quality of the relation and the visitor's personal and professional qualities was important (82). The seniors in a Swedish study (43) also expressed positive experiences with the six visits during two years, and the visitors could improve the seniors' sense of control and coping ability. Those with a perceived low degree of control over their everyday life appeared to gain more from the PHV than what other seniors did. A precondition for effective interventions was the visitors' ability to understand how the seniors' different coping strategies affected health (43).

We found three studies on Dutch nurse-led problem-based PHV interventions. The first intervention with five visits during 12 months aimed to prevent falls and mobility impairment in persons with risk of falling (83). The second intervention offered eight visits during 18 months, aimed at supporting frail older individuals' functioning and independence (84). The third intervention' six visits during three months aimed at improving several health aspects of older persons with a geriatric problem (85, 86). Shared findings were that many participants were unwilling to change behaviour or follow recommendation because they did not perceive these as acceptable or relevant (83-86). One study found that the users' willingness to accept recommendations tended to increase during the intervention period, and found significant differences in the participants' compliance to recommendations depending on which nurse conducted the PHV (83). Contrary to the interventions' aims, the users expressed psychosocial needs, and reported benefits related to possibilities to talk about health-related problems, and advice on safe homes, home modification, aids and devices (83, 84). Critical intervention components comprised tailoring interventions to the users' needs and preferences in order to improve adherence to recommendations, enough time, and good communication and cooperation between visitors, GPs, patient and informal caregivers (85, 86).

Summary and knowledge gap at study start

The literature review displayed the heterogeneity within the PHV concept and the problems with achieving valid and reliable conclusions about effectiveness and efficiency of these complex and multifaceted interventions. Knowledge from the systematic reviews in sum indicated that PHV might positively affect some health related outcomes. Some agreement indicated a support for PHV with qualified professional visitors to not too frail older persons, comprehensive interventions that included MGA, long-time follow up and the possibility to target the intervention to individual needs. Knowledge from RCTs were insufficient to make recommendations for how to design and carry out effective PHV. Qualitative research were called for to provide a better understanding of the context, the content and delivery of the visits. Several researchers questioned the prevailing focus on outcomes related to a negative health perspective in trials and reviews. They therefore recommended inclusion of other, more health promotive and patient centred outcomes, and advised to identify older peoples' opinions of relevant outcomes from PHV.

The few existing qualitative studies on PHV agreed that many older persons appreciated the visits and perceived them as beneficial. It seemed that many older persons had complex problems and unmet psychosocial needs. Experiences from risk/problem-based interventions showed that non-compliance to professionals' recommendations could be explained by the participants' perceptions of these as irrelevant, unacceptable or contrary to their values and preferences. Essential components for positive results were a trusting relation between the older person and the service provider, service providers with good communication skills, positive attitudes towards aging, ability to identify individual health-related and social problems as well as health resources, and ability to tailor recommendations and support to each users' needs and preferences. Structural factors of importance were sufficient time, repeated visits and cooperation between service providers and GPs.

In sum, these studies indicate that PHV should be comprehensive and include long-time follow up. The aims and content of PHV have to be perceived as relevant by the users, and the service providers' competence and attitudes influence benefits from the service. There is a lack of in-depth studies of comprehensive PHV-services with long-time follow up. We found no case-studies of specific PHV models. Exploration of the perspectives of service providers and service users are needed to understand what is valuable aims and outcomes for older people, and what factors are important for obtaining positive outcomes.

2.1.5 Knowledge on PHV after study start

Knowledge from quantitative studies

We found six systematic reviews on PHV published after the start of our study in the searches in June 2013, February 2015, June 2017 and April 2018; main characteristics are described in Table 3 (Appendix 3), and Table 4 displays the results and conclusions.

Table 4. Reviews after study start. Results and conclusions.

Reference n trials	Type of Review	Results and Conclusions
Tappenden et al. (2012) 11 trials	Systematic review and meta-analyses	Pos eff. on Mortality, Varying eff on other outcomes. Concl: PHV can reduce mortality and appear to improve the health and well-being in older people. Economy: not possible to conclude
Frost et al. (2012) 62 reviews	General review (review of systematic reviews)	Inconsistent findings. Most likely successful if: target frail with low to medium risk, include MGA, multiple follow up and interventions tailored to needs. Exercise increase strength and physical functioning, balance exercises reduce falls. Economy: not possible to conclude
Skumsnes et al. (2013) 7 trials	Systematic Review	Small effects: self-rated health: positive in 1/5 and quality of life: in 1/3 Concl: A small positive effect in two studies. (Weak)support for well-educated and specially trained professionals and interdisciplinary teams
Mayo-Wilson et al. (2014) 64 trials	Systematic review and meta-analysis	Small pos. effect on mortality, hospital admission, physical function and psychiatric illness. Concl: no consistent effect on mortality or independent living. Not possible to identify effective programs. Some programs may be effective.
Tourigny et al., (2015) 10 reviews	General review (review of systematic reviews)	Small and conflicting results. Mortality: some evidence for better outcomes if not too old. Functional ability: some evidence support MGA with clinical examination and follow-up. Concl: Need for a coherent definition of PHV programs
Renz et al. (2017) 12 trials + 4 reviews	Systematic review and meta-analysis	6/12 RCTs with positive effects for individual outcomes, often short time and partly limited to individual subgroups. No reliable proof of efficacy on the evaluated outcomes in the reviews. No clear proof of the efficacy. Not possible to identify structure or process features affecting outcomes.

Four of the reviews measured effect on mortality, institutionalization and morbidity (48, 87-89), but heterogeneity and missing descriptions of intervention components, delivery and participant compliance made it difficult to conclude. The most comprehensive review (48) concluded that PHV was not consistently associated with clinically important positive effects on mortality and independent living, but they could not exclude the possibility that some programs were effective (48). The two most recent reviews supported these conclusions (88, 89). A single review assessed the effect of PHV on self-rated health (90) and two assessed

quality of life (89, 90). The few studies included mirror the limited focus on these outcomes in RCTs. In Skumsnes' review, one out of five studies on self-rated health and one out of three studies on quality of life showed a small positive effect, while Renz and Meinck found positive results in one out of six studies assessing quality of life (89). Skumsnes' conclusion of support for visitors belonging to interdisciplinary teams (90) was based on only two interventions, and therefore appears rather uncertain.

We found two general reviews. Frost and colleagues reviewed 62 systematic reviews on complex interventions that aimed to prevent or delay disablement in later life, including nine on PHV (91). They concluded that exercise programs could be effective to prevent falls, and advice about assistive devices and home modification increased functioning. They found inconclusive evidence for specific interventions. Complex interventions were most likely to be successful if they targeted persons with low to medium risk for frailty and included MGA followed by a range of easily accessible interventions tailored to need, and included multiple follow up (91). Tourigny and colleagues (88) analysed 10 reviews on PHVs to frail older people. They concluded similarly as Frost did, and called for a coherent definition of PHV programs and studies to achieve a better understanding of the impact of the components (88).

In addition to the reviews, relevant quantitative studies included a Danish study, which found that knowledge based inclusion procedures could modify the otherwise social imbalance in acceptance rates (92). Dutch researchers assessed PHV users' problems and needs with MGA, and found that frail older persons had some more problems and needs than a general population, but not enough to recommend PHV to frail persons only (93). A US process evaluation of a PHV intervention for disabled older persons found that physician-patient-family-nurse conference visits, educational material, disease and medication management activities and goal setting were associated with positive outcomes (94).

A multinational EU- funded disease preventive program to non-disabled persons 60+ (PRO-AGE), aimed to detect risk for functional decline and problems, achieve favourable change in health-related behaviour and facilitate preventive (medical) care. One branch of participants received a PHV reinforcement intervention where nurses offered at least five visits during two years (95). Other sub-studies tested other reinforcement methods, or no reinforcement (96). After the intervention, the PHV branch showed favourable effects on physical activity, vegetable/fruit intake, vaccination, and for testing blood pressure, cholesterol and glucose. After eight years, this group had significantly lower mortality rate than the control group,

mainly related to reduction in circulatory system disease (97). A main conclusion was that personal reinforcement by specially trained professionals who take into account individuals' personal preferences was a key factor for success of such programmes (97).

The Gothenburg “elderly persons in the risk zone” intervention targeted persons 80+, and tested if two preventive strategies could delay deterioration of self-rated health and ADL-functioning (98). The first strategy was a single PHV with focus on fall prevention, assistive devices and home adaptation, how to get help if needed, and information about local arrangements, services and physical training groups for older people. The second strategy was four weekly educational multi-professional group-meetings with additional educational material, followed by a single home visit. Focus was the aging process and tools/strategies to solve various problems. Both strategies reduced ADL dependence up to two years, the group meetings more than the PHV (99, 100). Being younger and more fit, and living alone predicted better ADL-outcomes (101). Both strategies delayed progression in morbidity and maintained satisfaction with health up to two years, and postponed frailty one year (102, 103).

The Stockholm one-year controlled intervention offered one PHV to home-dwelling 75-year-old persons by a district nurse (DN). The intervention had a predominantly health promotive focus, but the dialogue guide also covered health problems, medication and risk factors. After one year, the intervention group used more medications, had less pain, reported more knowledge about community/county council services, had less problems with ADL and breathing/circulation than the control group (104). A sub-study detected high proportions of risk factors for unsafe medication among the PHV users, and concluded that PHV gave a unique opportunity to promote safe medication among home-dwelling seniors (105).

Knowledge from recent qualitative studies

Several new qualitative studies reported PHV users' experiences, including Norwegian studies. A Dutch study explored the needs and preferences of frail older people and their informal caregivers concerning PHV (106). A good patient-professional relationship was extremely important. Personal continuity, being treated with respect and listened to contributed to the trust necessary for the patients' willingness to discuss their problems. The patients appreciated the visits, but their expectations and wishes related to care and well-being, not to cure and prevention, which was the stated aims of the service. The authors recommended including older persons in designing PHV services and defining the outcomes

best suited for measuring effectiveness of PHV (106). A sub-study explored the users' experiences within the Gothenburg single-visit PHV intervention to persons 80+ (107). The findings implied that the PHV could empower the participants, strengthen their self-esteem and feeling of being in control over their situation, and initiate preventive actions. Some, however, found the visit of no value (107).

Five Norwegian master theses explored PHV users' experiences after one visit in various contexts. The majority had a positive opinion of PHV, and the services contributed to a sense of security related to future health-related challenges (108-112). Some received useful information/advice related to risk factors, safe homes and/or healthy living (108-110) and the PHV could make older persons' feel valued and affirmed (110). Many had unclear understanding of the aim of the visit (109, 110, 112). The quality of the dialog was important to establish a relation and achieve a health promoting conversation (111), and the degree of trust in the relation influenced the adherence to advice (108). Their willingness to talk openly about their life situation, health and problems depended on personal trust and visitors with a responsive and non-judging attitude (109). Visits tailored to the individuals' varying needs contributed to a positive perception of the offer (109).

A later publication based on Heggelund's master thesis elaborated on the finding of users' unclear expectations and poor understanding of the services' content and aims (113). The authors concluded that invitations with clearly formulated information about the service's purpose and aims, and specific information that enable the users to prepare for the visit might enhance the users' acceptance and utilization of the service (113). A later publication including results from Sjøbø's master thesis concluded similarly to the master thesis (114). Skovdahl and colleagues (115) also reported experiences from a Norwegian single-visit PHV. The PHV increased users' feeling of safety and confirmed their feeling of value. They appreciated information about healthy living, their legal rights, activities and services for seniors, home modification and assistive devices, and valued ability to discuss future living arrangements and talk about psychosocial problems. (115).

Studies of service providers' experiences with PHVs were scarce. Based on nurses' documentation, a study of a Japanese PHV service with monthly or more visits to non-disabled persons found that positive outcomes depended on collaborative relationships between nurses and users. The nurses' competence was critical, and the most important

elements were communication skills, professionalism, a caring approach, and ability to offer immediate response to identified needs or problems (116). Liebel and colleagues (117) analysed US nurses' documentation to explore how monthly or more PHVs to disabled older persons contributed to positive function-related outcomes. The study confirmed the importance of the nurses' competence and attitudes, their ability to build and maintain a patient-centred working relationship, and to deliver tailored help and support. Facilitators for positive outcomes were multiple visits, shared decision-making, trust, cooperation between formal and informal caregivers, and interdisciplinary cooperation. Barriers were disability worsening, patients' lack of interest in PHVs and low motivation for changes (117).

A study in the Stockholm PHV project reported experiences after at least five visits (118). The health dialogue rested on a complex social process, in which the nurse balanced a personal and professional approach, combined person-oriented and task-oriented approaches, and salutogenic and pathogenic perspectives. Facilitators to the dialogue were the older persons' trust, cooperation, openness, and understanding of the aims of the PHV, the nurses' ability to stay emotionally and intellectually open, and to use the interview guide in a flexible way. Perceived barriers were time pressure, users with poor understanding of the PHV, if nurses were unfamiliar with individuals' cultural background, were afraid of embarrassing older persons, or had problems with controlling the dialogue (118). A pilot-test of the protocol for a Swedish PHV intervention for persons aged 80+ (2) inspired by the PRO-AGE program (95) revealed that some questions in the structured risk-assessment tool could be perceived as too direct to ask, and it was not always appropriate to perform assessment of the home (2)

The two nurses who provided the service in Skovdahl's study (115) perceived geriatric nursing competence important and relevant for the PHV, because this enabled them to differ between normal aging and disease, and to strengthen older peoples' self-efficacy. They meant PHV functioned well as a low-threshold-offer, provided the possibility to refer the users to relevant healthcare services, or 'sluice' them to different services and activities (115).

Parallel to the present PhD study, the Norwegian Ministry of Health and Care Services ordered a summary of knowledge from PHV from the Centre for Care Research West, published in late autumn 2017 (119). Recommendations for establishing and conducting PHV have been made based on this (120). The summary recommended further studies, including studies that contribute to more knowledge about different PHV models, and explore the effects and essential components for independence and positive health outcomes (119).

Summary of knowledge after study start

Comprehensive systematic reviews and meta-analyses published after the start of our study still failed to produce consistent evidence regarding effects of PHV. Advice on how to carry out PHV supported earlier recommendations, but added recommendations that MGA should be followed by a range of easily accessible interventions tailored to need. Other studies have advocated proactive invitational procedures, and not limiting PHV-services to frail persons. PHV by qualified professionals who take into account individuals' personal preferences was identified as a key factor for positive health behaviour changes. Contrary to these recommendations, two Swedish studies demonstrated that a single PHV might generate certain objective and subjective benefits that last up to two years.

The number of qualitative studies on PHV has increased. Several studies strengthened and nuanced the importance of at trusting, collaborative relationship and of individualized support. This rested on the service providers' attitudes, communicative/relational competence and competence related to geriatric problems, disease prevention and health promotion. Quite a few studies explored users' experiences after a single PHV. The users were in general satisfied with the services, which contributed to a sense of security related to future health situation. Scandinavian older persons seemed to have a vague understanding of the aims of PHV, and clear information about the aim and content of the service in the invitations to PHV is therefore important for acceptance, utilisation and adherence. A Dutch study pointed to the necessity to include older persons in designing PHVs and in defining the outcomes from the services. PHV visitors recommended special training and multi-professional cooperation.

In Scandinavia, a frequent PHV model is to offer annual visits to the general population of home-dwelling older people. We could not find any studies that reported service providers' long-time experiences with conducting such PHV, or studies that explored users experience with PHV after long time follow up. In sum, the research on PHV published after the start of our study actualized and supported the aims and research questions in our study. The new studies have been included in the discussion section, and contributed to an expanded interpretation of the findings from the sub-studies in this PhD study.

2.2 Perspectives on health and health promotion

In this study, we hold a comprehensive understanding of health promotion as “any activity that improves health status” (121). The literature on PHV revealed that the concept of health was defined and understood in various ways, which in turn determined how health promotion and disease prevention was focused in the interventions. In this section, we therefore present theories that describe different understandings of health, the relations between health and disease and explain how disease prevention and health promotion are understood and operationalized within different theories. The theories do not form a coherent framework for the study, as these theories relate to different knowledge bases and ideologies, and represent various theoretical levels. The theories are thus more like a patchwork of different perspectives that shed light on various aspects of the complex “world” of PHVs to older people. To make reading easier, the theories are sorted and presented according to three main understandings of health: as absence of disease, as well-being and as a resource (122).

The theories have contributed with knowledge necessary to critically read research articles related to various PHV interventions. More important, knowledge derived from these perspectives has been necessary to understand what older peoples’ health might comprise, and to recognize diverse health promotive and disease preventive actions and strategies in the informants’ stories about their experiences of PHV. Finally, the various theories were central in the interpretation and discussion of the findings. The diversity of the theoretical perspectives on health and health promotion also motivated an explorative study design.

2.2.1 Health as absence of disease

The traditional biomedical understanding of health is absence of disease. This definition is described as a negative definition of health, because health is defined as something it is not, or the lack of something. This can also be characterized as an objective health definition as it depends on the presence of objective symptoms of disease that can be identified by health professionals with adequate biomedical knowledge (122, 123). To promote health is consequently understood as prevention of disease.

The incidence of disease increases in old age, and disease negatively impacts older people’s functional ability and quality of life (124). Disease preventive strategies are therefore central to the promotion of older persons’ health. Health professionals use pathogenesis, the

biomedical knowledge of what leads to illness, in various disease preventive strategies targeted at a general population (population strategies) or individuals (high-risk strategies) (122, 123). Both strategies may be used in PHV. Primary prevention aims to define and reduce risk factors for disease or injury (122). Examples of general preventive initiatives relevant in PHV are recommendations for influenza-vaccination, or removing loose carpets in older persons' homes to prevent falls. High-risk strategies are based on individual screening for risk factors or early stages of disease, followed by adequate interventions. An example of high-risk primary prevention is if clinical assessment reveals high blood pressure, the person is advised to contact a GP to get medical treatment to reduce the risk of cardiovascular disease. Secondary prevention is to diagnose and treat existing pathology before it leads to complications or functional decline. Examples are initiatives to optimize treatment of arthritis or diabetes to prevent long-term complications. High-risk primary- and secondary prevention are closely connected to clinical medicine (123) and therefore often require involvement of GPs. Tertiary prevention aims to reduce the consequences of disease, for instance rehabilitation after stroke, fractures or myocardial infarction (122). Examples of this preventive approach may be advice and instruction on how to do targeted exercises or referral to PT for qualified rehabilitation.

2.2.2 Health as well-being

Despite the success of disease preventive strategies, changes in the population's morbidity towards more complex and long-term conditions led to a growing understanding of the importance of subjective health. This gave way for the WHO definition of health in 1948: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (125). Even if this definition today is viewed as a utopia, it affirms that both subjective and objective elements contribute to health. The understanding of subjective health as well-being opens up for a positive definition of health as something that can be strengthened and promoted despite diagnosed disease (121, 122).

Keyes' two-continuum model of mental health is a theory that expands the understanding of the subjective well-being aspect of health in the WHO-definition (126, 127). In his model, mental disease and subjective health as well-being are positioned on two separate continuums as different but related phenomenon. Keyes emphasizes the possibilities to and the value of promoting individual well-being regardless of the objective disease status, and his theory has

found support in empirical studies (128-131). To guide health promotive work Keyes operationalized the concept of subjective well-being to include indicators of emotional well-being, psychological well-being and social well-being, presented in Table 5. Keyes theory does not include physical aspects of well-being.

Table 5. Keyes' operationalization of the subjective well-being concept

Aspects of subjective well-being	Indicators
Emotional well-being	Positive affect Avowed quality of life
Psychological well-being	Self-acceptance Personal growth Purpose in life Environmental mastery Autonomy Positive relations with others
Social well-being	Social acceptance Social actualization Social contribution Social coherence Social integration

Emotional well-being relate to happiness or experiencing pleasure. Psychological and social well-being relate to happiness defined as living meaningful and socially valuable lives. The indicators of psychological well-being cover personal aspects of positive functioning and individual processes characterized by autonomy and awareness, while the indicators of social well-being include aspects of social functioning and belonging (126, 132). All the indicators of well-being may be supported and enhanced, and thus contribute to health promotion (126).

2.2.3 Health as a resource

Health may also be perceived as a resource for a good life, positive functioning and coping (122). Also this understanding constitutes a positive definition of health as something that can be promoted (122). WHO's definition of health promotion stated in the Ottawa Charter (133) is based on health as a resource for everyday life (121, 122). Health promotion is here defined

as “the process of enabling individuals and communities to increase control over the determinants of health thereby improving health, to live active and productive lives” (133, 134). The individual aspects of health promotion includes providing information, education for health, and enhancing skills that increase the users’ capacity to take responsibility for and improve their own health (133). This definition calls for professional working principles based on empowerment, shared decision-making and counselling.

A central theory with focus on resources and coping ability is Antonovsky’s theory on salutogenesis, or what creates health (135). This innovative theory opens for a new and different way of understanding health and presents opportunities for health promotive initiatives that have proved to be effective (136, 137). Antonovsky described health on a continuum between ease and dis-ease, and the position on the continuum depends on a person’s ability to cope with challenges and strains. Disease is one of several stressors that might reduce health. A person’s ability to cope rests on his/her internal and external biological, psychosocial and material resistance resources, and the person’s ability to use these resources in a health promotive way. This depend on what Antonovsky calls the person’s sense of coherence (SOC):

A global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli deriving from one’s internal and external environments in the course of living are structured, predictable and explicable, (2) the resources are available to one to meet the demands posed by these stimuli and (3) these demands are challenges, worthy of investments and engagement (135).

One can accordingly define promotion of health as the support of a person’s resources and the strengthening of his/her sense of comprehensibility, manageability and meaningfulness (135, 138).

Inspired by Antonovsky and other theorists, a group of health experts questioned the WHO definition of health in light of the current situation with increasing numbers of persons with chronic diseases. They proposed a dynamic, resource-based concept of health as “the ability to adapt and to self manage” (139). This formulation was based on the resilience or capacity to cope, and ability to maintain and restore one’s integrity, equilibrium, and sense of wellbeing in the face of social, physical, and emotional challenges (139).

Several other theories exist which are related to older people's resources or life strengths, and these theories are therefore especially relevant for this study. Fry & Debats (140) reviewed the literature on these theories and developed a conceptual framework on the major sources of life strengths that contribute to well-being and health in late life (140), presented in Figure 1.

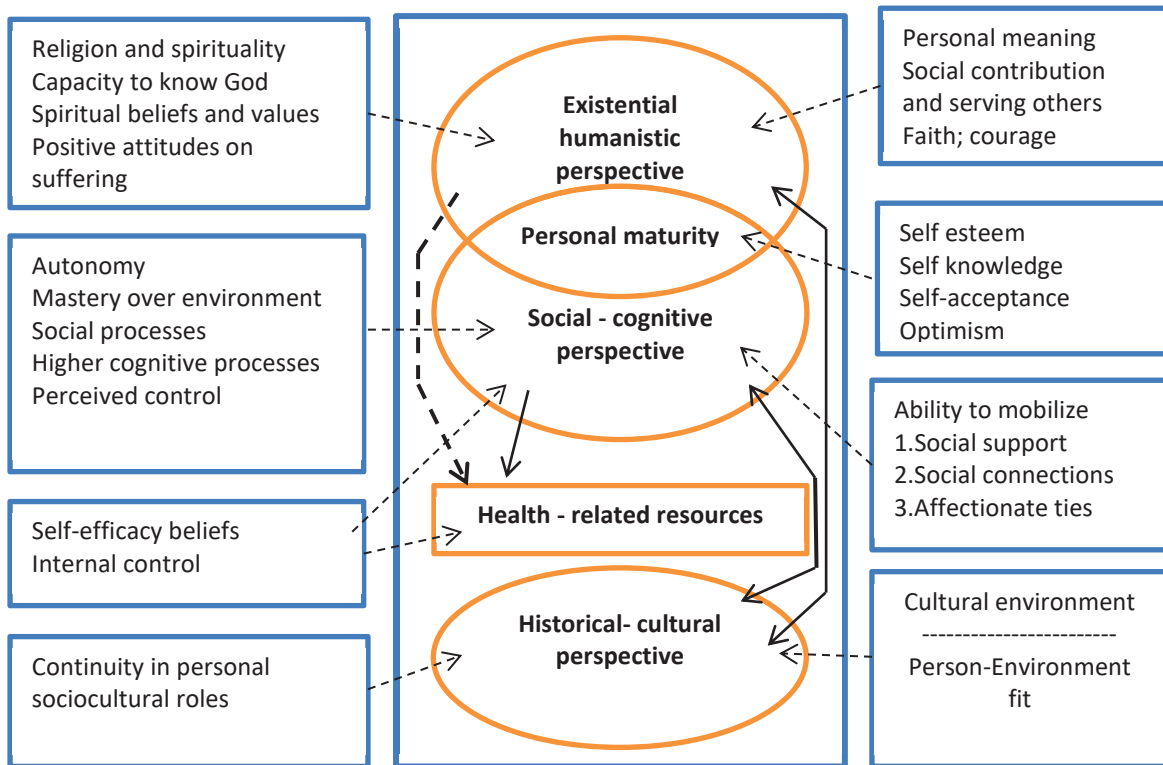


Figure 1. Schematic representation of the major sources of life-strengths from different theoretical perspectives (Fry & Debats, 2010). Reprinted with permission from the authors and publisher.

The sources included in the model represent possible domains whereby one can promote health and well-being for older people, but does not include theories related to physical or bodily aspects. This does not mean that bodily functioning is unimportant as a resource for older persons, quite the contrary, but the model fills out the picture and expands less noticed areas of potential health benefits for older persons. The promotion of health must include a personalized approach because older people consider and value the different aspects of health individually, and each person's resources interact to support well-being and coping in different and numerous ways (140). Sources of life strengths are developed throughout life and several studies reveal a tendency that emotional and existential areas are relatively more important in later life (140-143).

2.2.4 A comprehensive understanding of health and health promotion

To sum up, a comprehensive understanding of health includes objective health understood as absence of disease, subjective health understood as well-being, and health as a resource for coping and a good life. Consequently, health promotion includes strategies based on pathogenesis that may prevent disease or reduce consequences of disease, and various salutogenic strategies that may promote wellbeing and coping through a health resource perspective. For older persons, optimal health may be understood as the ability to use their health resources despite disease and aging processes (144). The metaphor of a person as a medal with two sides illustrate this dualistic, complementary relation between objective and subjective health, and between pathogenesis and salutogenesis perspectives (145).

During this PhD study, we have found empirical evidence that supports such a comprehensive approach to PHV. Therefore, we claim that within PHV services, a need exists for an understanding of health as a synthesis of objective health as absence of disease, subjective health as well-being, and health as a resource for coping and a good life. Such a health concept opens for a broad repertoire of preventive/health promotive strategies necessary for individual targeting of the service and optimal support for each user's needs and valued goals.

2.3 Description of the Case: the PHV service in the study

2.3.1 The municipality

The municipality where the actual PHV service took place was a Norwegian urban municipality with 60 000 inhabitants. The Norwegian social democratic welfare state model has well-developed public health care and social services, which are mainly free of charge and provided on the basis of professional judgment of need. By law (146, 147), all municipalities must offer essential health care services to their inhabitants, such as home health care, rehabilitation and nursing homes. Health promotion and prevention is part of the municipalities' mandatory obligations, but each municipality is free to decide how to realize these and what services to offer. The PHV service in the present study was developed in one of the first Norwegian municipalities to introduce PHV services in 1999. The municipal

health care services also had an ambulatory geriatric team that could perform geriatric assessment, a team of physiotherapists and a team of occupational therapists, and the nurses in the PHV service could refer patients to these if appropriate.

2.3.2 Development of the PHV service

Inspired by Danish models, a few enthusiastic nurses in the municipality's home health care services initiated the introduction of PHV in the late 1990s. This resulted in a pilot project in a single part of the city, run by three experienced nurses who developed the service approach. During the pilot PHV period (1999-2004), all home-dwelling older citizens aged 75 and above without need for ordinary home health care were invited to the service. Positive experiences led to implementation of the PHV service in the entire municipality in 2004, and seven more nurses were employed. From 2004, citizens were enrolled as they reached 75 years of age, starting with those born in 1929. Since the start in 1999, no systematic evaluations had been undertaken and no substantial changes had been made to the service approach. The number of users increased steadily, and had started to threaten the services' capacity. The municipality authorities therefore wanted an evaluation of the PHV service.

2.3.3 Aim, organization and service providers

The name of this service is "helsefremmende og forebyggende hjemmebesøk til eldre", freely translated, "health promotive and preventive home visits to older citizens". The aims of this PHV service were not explicitly formulated, but were described within the information about the service on the municipality's web pages. On the pages intended for public citizens, aims were described as follows: To support each person's resources through counselling, advice and follow up, and to enable ageing citizens to sustain and develop health, functional ability, thriving, and safety. The aims on the pages intended for health-care personnel were: To contribute to health promotion for citizens older than 75 years of age, to enable older citizens to live in their own homes as long as possible, to delay the need for more comprehensive home health care services and institutionalization, and to get an overview over the ageing population in the municipality (148).

The service was organised as a separate team under the auspices of the municipal home service, and the nurses performing the service (the visitors) were responsible for older persons in different districts. In this municipality, high competence within geriatric nursing and good

communication skills was required to work within PHV. The service providers should also be familiar with what legal rights older people had and possess detailed knowledge of relevant services and activities for older persons. At the time when the data were collected, ten registered nurses representing 9.2 fulltime equivalents provided the service. In addition to several years of experience within geriatric nursing, all the nurses had relevant formal further education. One held a Master's degree in geriatric health care and three had further education in geriatric nursing, three had formal training in care for patients with dementia, three in psychiatric health care and one in counselling. Three of the nurses had worked in the PHV service from the start of the pilot period in 1999, while six were engaged when the service was rolled out in the entire municipality in 2004/5. One nurse had only 15 months of experience in PHV because she replaced a nurse who was on sick leave.

2.3.4 Target group and recruitment to the service

PHV was offered to all home-dwelling citizens who were not users of regular home health care, from the age of 75. All inhabitants meeting these requirements received a mailed invitation to the PHV with brief information about the service (Appendix 1). The aims of the service were not stated, but the visits were described as an opportunity to talk about their daily concerns, for instance on the subject of health, safety, thriving, housing conditions and the time ahead, and an opportunity to get information about relevant health care services in the municipality. The invitation letter included the visitor's name and contact information and a date for a proposed first visit. Unless contacted, the nurse would visit as scheduled. The municipality has not registered the acceptance rates of the service each year, but according to registrations from 2007 and 2008, between 75-80 % of the invited persons accepted the visit.

2.3.5 Content of the visits and follow up

During the first visit, the visitor aimed at establishing a cooperative relationship with the PHV user, and obtaining a comprehensive picture of the user's health and home situation, problems and resources. The first visit often lasted two to three hours and formed the basis for individualised initiatives and further support. The visitor did not use geriatric assessment instruments, but instead a theme guide that provided structure to the conversation. The theme guide covered life history, physical and mental health, functional ability, nutrition, home safety and need for home modifications, activities and life style as well as family and social

network. Using the information from this conversation, the visitor provided personalized support, practical help and information which was intended to empower older persons to utilise their own resources and to make improvements in their daily life (148). The visitor became the users' municipal contact person, and users were encouraged to contact their visitor if they had any questions or needed help.

At a minimum, one annual follow-up visit was offered. The aim of the follow-up visits was to strengthen the relation, attain an update of the situation, and if necessary offer relevant initiatives, support, and give an opportunity to elaborate on themes of importance to the older person. Follow up visits often lasted one hour or less, depending on the situation. The support given followed the changes in each person's needs and health status over time. This could comprise psychosocial support, information on services or activities available for older people in the community, a recommendation to contact his/her general practitioner for medical consultation, a referral to other municipal health care services such as OT or PT, or the arrangement of contact with voluntary services. The visitor also provided assistive devices if needed for home safety or improved functioning, and gave information and advice on such devices and where to get these if need might occur later. If necessary, the visitors could offer and organize practical support to ease a heavy care burden, for instance to spouses of persons suffering from dementia.

More frequent visits could be offered to motivate a person to accept further help and treatment, or if the situation was unclear and further observation was needed to be able to judge if GP consultation was indicated. Extra visits were also offered if the visitors became aware of incidents known to bring about a risk of deterioration, such as loss of spouse or newly diagnosed severe illness, especially to persons without close relatives. Provision of assistive devices also led to an extra visit, to check and ensure that the person knew how to utilize these devices in a safe and optimal way. The PHV services continued for as long as the users agreed to them, but were terminated if/when a decline in a users' health and function necessitated ordinary home health care or institutionalization. The nurses met the leaders of the home health care district regularly and informed about upcoming needs for transitions of PHV users. Each PHV nurse recorded and stored his/her notes in an area exclusive to the PHV service in the municipality's electronic patient journal system. This information followed the user when a person was transferred to other municipality health care services.

3 Aims and Research Questions

This PhD project was initiated on the background of a request from the authorities in a municipality to evaluate their PHV service, which offered annual visits to a general population of older people. There is also a national and international request for studies that explore service providers' and users' experiences and opinions of PHV, and for studies that shed light on what contributes to positive outcomes of various models of PHV. Therefore, the research undertaken in this PhD project had a twofold overall purpose: to produce generalized knowledge that adds to the international knowledge base on PHV, and to produce knowledge for the local municipal authorities and health practitioners that can be used to evaluate their particular PHV service. We hope the knowledge gained in the study can contribute to improvements in PHV services locally and in other contexts.

To ensure that the study would deal with relevant research questions as perceived by the different stakeholders, the team of researchers from the university college (the main supervisor of the project, a master student who did his master thesis within the project and me) invited a resource group to take part in the planning of the study. This group comprised two professionals from the municipality's research and professional development unit and three clinical nurses from the team who performed the visits. This joint planning combined with knowledge from previous research and literature resulted in the aims and research questions of the studies in this research project.

The main aim of this PhD study was to explore and describe how long-term preventive home visits affect older persons' health and possibility for a good life in their own homes.

The information to answer this research problem was gained from three sub-studies.

Study 1.

Aim: To explore older persons' perceived benefits of PHV after long-term follow up.

Research question:

1. How do older persons perceive and describe benefits of PHV after long-term follow up?

Study 2.

Aims: To assess older persons' perceived benefits and opinions of a PHV service and explore associations between perceived benefits from PHV and relevant sociodemographic/health related factors.

Research questions:

2. How does a representative sample of older PHV users evaluate the PHV service?
3. Are there associations between perceived benefits from PHV and subgroups of PHV users?

Study 3.

Aim: To describe nurses' perspectives on how long-term follow up with annual PHV can generate benefits for a general population of older persons in a Norwegian context.

Research questions:

4. What did the nurses experience as benefits from the long-term follow-up?
5. What did the nurses perceive as important for the creation of benefits in a long-term perspective?

4 Research Design and Methods

4.1 Main study design

We applied an explorative case study design with a multiple methods approach to generate knowledge on how PHV affect older persons' health and possibility for a good life in their own home. Explorative research provides possibilities for in-depth investigation of the various ways in which a phenomenon is manifested, of the underlying processes, and the relations between the phenomenon and other factors (149). The literature review revealed a lack of knowledge about older persons' long-term experiences with and opinions of PHV, service providers' long-term experiences with conducting annual PHV, and what contributes to positive outcomes of PHV. An explorative design that aimed to investigate a phenomenon of which little is known was therefore appropriate (149).

We applied a case study comprising three sub-studies. Figure 2 displays an outline of the case study design, with the different sub-studies and the main aim of the PhD-study.

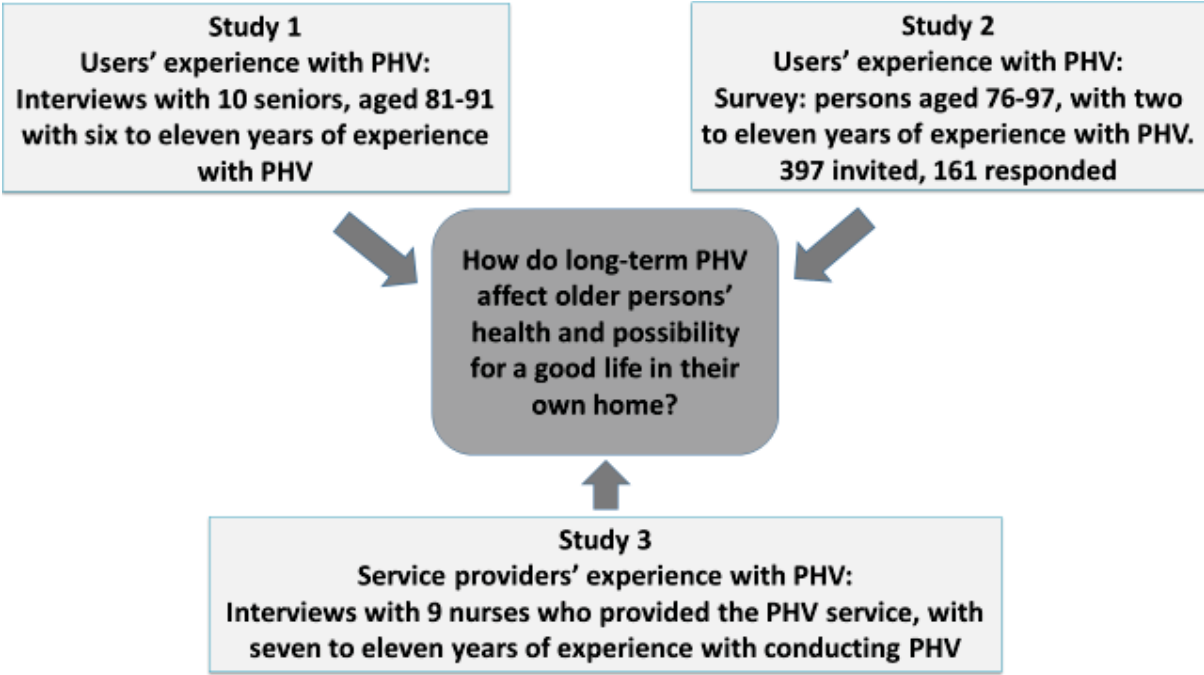


Figure 2. Illustration of the PhD study's case study design.

A case study typically investigates a contemporary phenomenon within its real-life context, in particular if one believes that contextual conditions might be relevant for the phenomenon of study. The focus is on what can be learned about the particular case (150). Case studies rely on convergence of multiple sources of evidence, and the basis for case studies can be any mix of qualitative and quantitative evidence (150, 151). Case studies are in particular relevant for research that aims to explain how some circumstance work, and where an in-depth description of some social phenomenon is required (151). The strength of a case study is the possibility to gather rich and in-depth information from several perspectives on complex phenomenon (149-151).

The research questions called for the use of both qualitative and quantitative methods. Qualitative, individual research interviews were suitable to explore which outcomes of PHV the users described and valued after several years of follow up (study 1). Qualitative individual research interviews were also suitable to explore the nurses' experiences with conducting long-term PHV follow-up (study 3) (149, 152). A survey was appropriate to collect information about a representative sample of PHV users' opinions of the service and explore possible associations between perceived outcomes and socio-demographic and health related factors (study 2) (149). Data from the sub-studies were analyzed separately, and published in the three articles, and each article answered research questions relevant for the main aim of the PhD-study. Thereafter, the different sources of evidence were triangulated, that is combined and compared to give a convergent answer to what we have learnt from the case related to the main research problem (150, 151, 153, 154), presented in the findings section I this thesis.

The benefits of applying various methods in a case study is the ability of each method to add to a more nuanced picture of PHV (155), and to extend the scope and depth of understanding of the service (156-158). This approach thus add breadth, complexity and richness to the inquiry (159), and give possibilities to provide strengths that offset the weaknesses of both qualitative and quantitative research (160). The design thereby increased the overall quality of the investigation.

We found no instruments suitable for collecting older persons' opinions of PHV interventions in study 2, and we therefore needed to construct our own questionnaire. We followed recommendations from the literature and applied a sequential approach: first conducted a qualitative explorative study to define relevant outcomes (study 1), and subsequently used

these when creating the questionnaire for the quantitative study (study 2)(149, 154, 160, 161). Figure 3 displays the sequence of sub-studies and the construction of the questionnaire in the users' perspective part of the study.

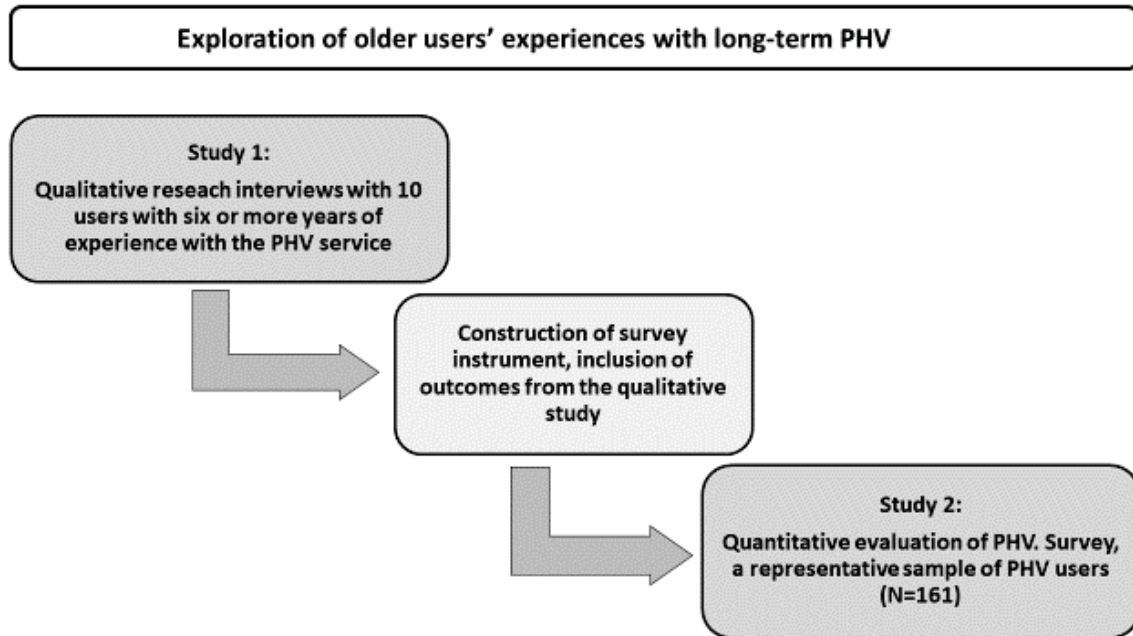


Figure 3. Model of the sequence of the sub-studies exploring the users' experiences and the construction of the survey instrument.

4.2 Selection of case

Selection of the PHV service as a case for this study was a combination of purposeful and convenience sampling. Convenience sampling is to sample the most available participants to a study (149, 154), and the municipality where the authorities wanted an evaluation of their PHV service was in geographical proximity to the university college. We also deemed this PHV service a purposeful sample, which is a sample that the researcher considers representative or information rich and thus will offer insight about the questions under study (149, 154). The present municipality had a national pioneer status regarding PHV with more than ten years of experience with the service at study start, and the service had high acceptance rates. Several of the nurses had worked in the PHV service from the initiation, and the service users had up to eleven years of experience with annual follow-up from the PHV service. We therefore anticipated the case to offer rich material on long-term PHV follow up, corresponding to an intensity sample (154).

4.3 Study 1

4.3.1 Recruitment and participants

The first study explored older persons' perceived benefits of PHV after long-time follow up, and we applied a stratified purposeful sampling strategy to select participants (149, 154). To capture long-term effects and ensure participants with extensive experience with PHV, the municipality's list of potential participants was limited to individuals with more than six years of experience with the service. To ensure cooperative respondents, persons with diagnosed dementia was removed from the list prior to the sampling. The sampling and recruitment procedure is described in article one (162). The age range of the ten participants was 81 to 91 years, with a mean age of 85.5 years. In addition to these purposefully sampled informants, the spouses participated in two interviews, both women.

4.3.2 Data collection

We applied individual qualitative research interviews to obtain PHV users' experiences with PHV after long-time follow-up. Qualitative research interviews are semi-structured conversational interviews with a loose structure but a clear aim, and the interview data are socially constructed in the interplay between the researcher and informant (152). The literature review revealed a lack of knowledge about PHV users' long-time experiences with the service. Individual interviews were therefore considered well suited to gain in-depth knowledge of each user's experiences and opinions (152, 154). I carried out interviews with ten experienced PHV users during early summer in 2011. I have experience with doing qualitative research interviews from my master study, and formal education in counselling, which includes training in communicational skills. Experience from clinical nursing and reading within my PhD project has given me knowledge about PHV services and challenges for older persons linked to health, well-being, functional ability and independent living.

A topic guide made with input from the resource group supported the interviews. The PHV users' experiences of perceived benefits of the PHV service was a main topic. The interview guide also covered some research questions outside this thesis. We wanted the informants to share positive as well as negative experiences, and I therefore initiated each interview with the open question: 'Please tell me about your experiences with PHV'. This question opened for

very different views and stories. If the informants did not spontaneously mention outcomes from the service, I introduced this topic towards the end of the interview. Some of the informants were gifted tellers and corresponded with what Kvale and Brinkman define as good informants (152). Two of the informants were somewhat reserved and reluctant to give spontaneous information, but use of open, specific questions helped to obtain thoughtful answers if not rich descriptions on the different themes. A secretary transcribed the interviews verbatim, following instructions to make notes about nonverbal signs such as pauses, sighs or laughter to support the interpretation of the text (152).

4.3.3 Data analysis.

The analysis was inspired by hermeneutical understanding of interpretation. Hermeneutics is the science and methods of understanding and interpretation of meaning within the human sciences (152, 163, 164). The interviews explored persons' experiences with PHV, and an inductive, hermeneutical interpretation of meaning in the interview texts was therefore relevant. Several scientists such as Schleiermacher, Dilthey, Heidegger, Gadamer and Ricoeur have given valuable contributions to the development of hermeneutics as a philosophical theory, which is commonly applied in interpretation of texts in qualitative studies (164). I find Ricoeur's work on understanding of experience through interpretation of written language especially interesting and relevant (163). According to Ricoeur (163), people interpret meaning and understanding of the world, and construct reality out of individual horizons of understanding and situated contexts. Therefore, each person's lived experience becomes private, and cannot directly become others' experience (163). However, the *meaning* of the lived experience may be made public through what the persons tell and explain in different ways, and other people can get access to the experiences when these meanings are interpreted (163). To achieve understanding, the researcher needs to get into a dialogue with the text, and the researcher's pre-understanding is a starting point for the analysis process. The hermeneutical circle is central in hermeneutics: Interpretation and understanding is acquired and deepened through a continuous, circular or spiraled movement between the whole and parts of the text, and between the researchers pre-understanding and understanding (152, 164). To understand a text is «to follow its movement from sense to reference, from what it says to what it talks about» (163). Several interpretations may be possible, and extensive knowledge of the context will contribute to a best possible understanding of what the text "talks about", the meaning of the text (163).

In study 1, I applied a text analysis method inspired by Kvale and Brinkman’s three contexts of interpretation of meaning: the self-understanding context, the common-sense- context and the theoretical context (152). Because the analysis process was only shortly described in article 1 (162), I will explain and exemplify the steps in the analysis process to enhance transparency and reliability. Initially, I read each transcript while listening thoroughly to the corresponding taped interview, to get to know the content and to get a feeling of what was said and how things were said, and to ensure accurate transcriptions and notes. A transcription is always an abstraction and all the following steps in the analysis represent an increasing de-contextualization of the conversation. A good mental picture of the entire interview could therefore help me in the later interpretation of what was said in the interviews (152). The text was then prepared for further analysis; I removed irrelevant text and anonymized potential sensitive information.

The first context of interpretation represented the informant’s self-understanding (152). First, I identified meaningful parts of the text, and subsequently condensed these without altering the interview persons’ meaning. I had strived to verify my understanding of what the informants said during the interviews, and this was helpful in securing an interpretation consistent with the informants’ own understanding (152). Table 6 gives an example of condensation of meaning units from one of the interviews.

Table 6. Example of condensation of meaning units from one interview.

Transcript	Condensed meaning units
and it is.. one do get a feeling, eeh... that somebody cares about you, or, yeah,	PHV gives a feeling that somebody cares about me
but, well, my impression is, that it is mainly to explore how, what we look like, I think, we oldies, isn’t that what it is all about...	Believe the main aim is to get an overview of the old persons in the municipality Satisfied with information during the first visit
I think the information I got during the first visit, that was, that was OK	Nice to get a visit
Else, well, it is nice to get a visit, isn’t it, and, well, that, they keep an eye on you and notice that we are quite normal in the top floor.	Good to know that the PHV nurse keeps an eye on me The nurse observes and assesses my cognitive function

The second context of interpretation of meaning was the common-sense understanding. This interpretation extends the self-understanding of meaning to a broader context of understanding. By posing questions of what the person’s uttering told about PHV, in the light of the context and of the interview as a whole, we reached a more critical and abstracted level of interpretation. However, this interpretation of meaning stayed within the context of what was commonly known about the topic. Because this study focused on perceived benefits from PHV, all condensed meaning units about positive outcomes in each interview were collected and then sorted according to similarity and differences in meaning content. These grouped, similar meaning units constituted tentative categories, which were given names that covered all the content, exemplified in Table 7.

Table 7. Sorting of condensed meaning units related to benefits into a tentative category, from the same interview.

Condensed Meaning unit	Tentative category
PHV gives a feeling that somebody cares about me	Feeling of safety
It feels satisfying when somebody looks after you	
The nurse observes and assess my cognitive function	
Good to know that the PHV nurse keeps an eye on me	
PHV adds a feeling of safety	
The safety issue is what is important for me	

After this tentative categorizing of each interview, I assembled the categories related to benefits from all the interviews and studied them together, and grouped those who had similar or identical names and/or content. My supervisors were included in the sorting and categorisation process, which included creative processes of hermeneutical interpretation. We finally agreed on a matrix of categories and sub-categories that represented the meaning content at a common sense level of interpretation, or the manifest content of the interview. We also sought latent content in the interviews, which is meanings not openly told, or perhaps something the informants might not be fully aware of (152). In these interviews, we found that unfinished sentences, small comments, side stories and anecdotes often conveyed latent meaning content. A comprehensive hermeneutical interpretation of the various parts of the interview texts with meaningful content and hints and clues, in relation to the entire text

resulted in two latent themes. The latent themes represented main concerns for the informants, and the themes constituted a shared background for the manifest content of the benefits of the PHV service. The totality of manifest and latent content regarding perceived benefits from PHV are presented in article 1 (162) and in the results section.

The third context of interpretation was the theoretical understanding of the meaning content. In this interpretation we analysed and discussed the findings in relation to relevant research and theory to obtain a deeper and more comprehensive understanding of the meaning content in the data (152). This third level of interpretation of meaning was presented in the discussion section of article 1 (162) and in the results section of this thesis summary.

4.4 Study 2

4.4.1 Recruitment and participants

Study 2 aimed at evaluating the PHV service among a representative sample of PHV users in the municipality, and explored the associations between the perceived outcomes of PHV and socio-demographic and health-related factors. We applied a stratified random sampling strategy in order to acquire a representative sample of PHV users. Stratified random sampling is a selection of study participants from two or more subsets of the population, where an appropriate number of persons are randomly selected from each stratum independently (149). To ensure appropriate representation of different age segments of the population of PHV users, and thus enhance representativeness (149), the sample of PHV users was stratified in relation to year of birth. We wanted participants with experience from more than one visit; therefore, the sampling frame was all PHV users without diagnosed dementia enrolled in the PHV service before January 1st, 2012, counting 1830 individuals.

There were considerably fewer PHV users born in 1928 and earlier compared to those born in 1929-1936, because the majority of these oldest users were included in the pilot project period between 1999 and 2004. In this period all people older than 75 from only one home health care district were invited to join the PHV service. When the PHV service expanded to the entire municipality in 2004, they enrolled older citizens when they reached 75 years of age. As a result, persons born before 1929 in eight out of nine health care districts had not been invited to the PHV service. In addition, death or allocation to other health care services

caused by functional decline would have further diminished the oldest groups of PHV users. To ensure a sufficient amount of informants from both age groups, an administrative employee in the municipality with no connection to the PHV service picked a random selection of 20% of PHV users from each year of birth from 1936 to 1929 and 30% of those born in each year from 1928 or earlier. The alphabetical list of PHV users within the sampling frame was sorted by year of birth prior to the sampling. After drawing an initial starting number between one and five, every fifth among the younger group were selected and then comparable procedure for the older group. In total, we invited 393 PHV users to join the study; 267 in the youngest age group, and 126 in the oldest age group.

Previous studies have revealed that it is more difficult to include older persons than younger to surveys, because they possess several characteristics that may lead to low response rates (165-171). Because low response rates may lead to invalid conclusions and failure of the study to detect real differences in outcomes between groups of respondents (type 2 error) (149), we adhered to advice given in the literature to increase the response rate. All written information and the questionnaire were formatted in a clear and easy-to-read way to make it easier for persons with reading problems caused by visual impairment or low literacy levels, both commonly seen among the oldest part of the population (165, 172). The questionnaire was relatively short to minimize the burden of participating in the research project (165, 169, 170). The invitation and information leaflet had a first side with distinct, essential information on the study to catch interest and enhance understanding of the aim and acceptance of the study (165-167, 173). To enhance trust, we informed that the university college was responsible for the study, and used their letter head on the invitation (166). Two more pages comprised in-depth information as required to ensure informed consent (174-176).

To make the research project known in advance may stimulate interest and trust in the research and increase response rates (165, 166). We therefore presented the study to the municipality's senior advisory board and at a senior meeting for older persons in the municipality two weeks before the recruitment started. We also got the local newspaper to make a two-page interview about the research project soon before start of the recruitment.

The recruitment of participants followed two strategies. A written invitation and information leaflet sent by ordinary mail recruited participants from PHV users born from 1929 to 1936. The invitation was sent together with the questionnaire and a pre-stamped and pre-addressed return envelope. A response rate of 47.6% resulted in 127 respondents, 58 women and 69

men, from this subsample. We applied a two-step recruitment procedure for the subsample of persons born in 1928 and older, because information from this subsample was to be gathered in structured interviews in the informants' homes. To attend to informed consent, we initially sent an invitation letter with information about the study by mail to the persons in this subsample. After one week, three research assistants who had received detailed instructions on how to carry out the recruitment telephoned the 126 invited persons and asked if they wanted to participate in the study. Out of the 89 who answered the calls, 15 women and 19 men (38%) agreed to the structured interviews. Altogether, 161 respondents were recruited to the survey, comprising a total response rate of 41%. Figure 4 displays the distribution of the respondents by year of birth.

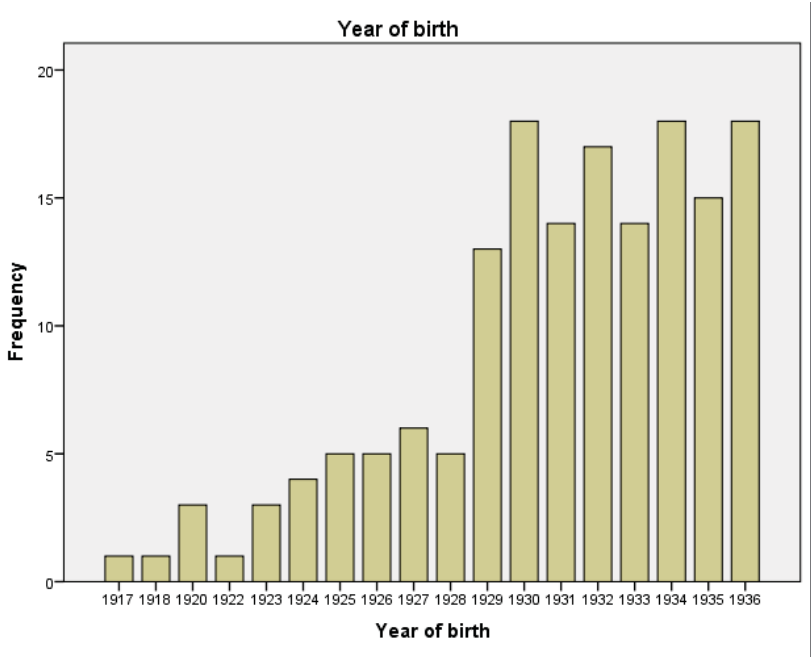


Figure 4. Distribution of the 161 respondents in the survey by year of birth.

4.4.2 The questionnaire

We applied structured data collection using a questionnaire with fixed response alternatives in study 2 (149, 177, 178) (Appendix 4). We developed the questionnaire especially for this study because our searches did not reveal any relevant instruments (149, 178, 179). A questionnaire with fixed response alternatives is appropriate as a survey instrument to collect quantifiable data for statistical analysis about respondents' preferences, opinions and beliefs (149). In study 2 the aims were to assess perceived benefits and opinions of the PHV among a representative sample of PHV users and explore associations between perceived benefits from

PHV and relevant sociodemographic/ health related factors. A structured data collection strategy was therefore appropriate.

We developed the questionnaire during winter and spring 2012/13 in cooperation with the projects resource group. The content of the questionnaire was informed by the aims of the service (148), knowledge about PHV from a systematic database search, results from study one (162), and opinions from experts in the resource group. The questionnaire should collect information also for other research questions in the case study evaluation, and all together, the questionnaire consisted of 90 items with fixed response alternatives, and six open questions. Only items relevant for the research questions in study 2 are described here. These items comprised the participant's sociodemographic background, health related items, and items related to main outcomes of the PHV service.

Sociodemographic items included gender, age, education, whether they lived alone or not, and number of children. Health related items were selected from well-established instruments and included five items of self-rated health (from SF 36), three items of social support (Oslo 3 Social support scale), and 6 items on personal values and dispositional optimism (Life orientation scale). The background questions had various response alternatives. The outcome section included five items that composed the evaluation of the PHV service. Three of these items measured the perceived benefits from PHV identified in study one: 'PHV contributes to my feeling of safety', 'PHV supports my ability to stay at home', and, 'PHV supports the possibility of having a good life' (162). These outcomes all corresponded well to the service's aims (148). We decided not to include the fourth perceived benefit: 'To be somebody' in the questionnaire, because we feared it could be difficult to rate this somewhat abstract item. We included an item measuring overall satisfaction with PHV, because patient satisfaction with care is an established nursing sensitive health care quality indicator (180-185). The last item rated perceived importance of the service for older people in the municipality. This item was meant to assess the perceived value of the service extending the individual's here and now situation. All the outcome items had five levels Likert-scale type response alternatives.

We used relevant literature to customize the questionnaire to older people (174, 186, 187), and two older persons gave advice on wording questions and response alternatives. The professionals in the resource group judged content validity of the evolving versions of the questionnaire. When the group approved the final questionnaire, we tested the face validity with eight persons within the target group. These pilot-testers were encouraged to give

feedback on instructions, questions and response alternatives as well as on layout and readability. Following advice from the literature (188) the test-persons read the material and commented orally while the researcher made notes. This resulted in minor adjustments.

4.4.3 Data collection

We applied two different administration forms to collect the structured data using the same questionnaire, during spring 2013. We applied mailed survey for the sample of PHV users born from 1936 to 1929. In this self-administered data collection method the respondents read the written questions and give their answers in writing. The respondents can answer the questions anonymously, whenever it suits them and in their own pace. Mailed surveys are economical and little time consuming for the researchers, but the method rests on the quality of the questionnaire regarding content and lay-out and the respondents reading and writing abilities (149). We assumed that the majority of these relatively younger, independently living PHV users had adequate reading and writing ability to justify this sampling strategy.

We used structured interviews to collect data from the sample of PHV users born in 1928 and earlier. Structured interviews are data collection using a structured questionnaire with response alternatives in a face to face situation (or by telephone) (149). The interviewer read each question and response alternatives for the informant, and filled in the answers to the questions on behalf of the informant. Structured interviews are quantitative interviews, where the interviewer strives to minimize his / hers influence on the data (149). A main advantage versus mailed questionnaire is that structured interviews allow persons with difficulties with reading or writing to join the study (149). Structured interviews often give higher response rates among old persons than mailed surveys, most likely because the prevalence of physical decline and disease increases with age (149, 170). We therefore considered structured interviews to be an appropriate data collection strategy for the oldest sample of PHV users.

The three research assistants who had participated in the recruitment of the respondents collected the data in the respondents' homes. The research assistants were students in their last semester of their bachelor studies in nursing, and the nursing institute leaders supported this one-week of alternative community nursing practice. The research assistants received written and oral information about the study and detailed directions on how to carry out the interviews. To reduce interviewer bias, they were instructed to state the questions accurately and without suggestions for interpretation of questions or responses (149).

4.4.4 Data analysis

Data were analysed using the IBM Statistical Package for the Social Sciences (SPSS) version 21. We applied various descriptive statistical methods to describe the sample on basis of the responses on the background items. The choice of statistical methods depended on the measurement levels of the data, and we transferred several of the variables into bivariate variables to fit analyses, and to make the description clearer. Cross- tabulations analysed relationships between categorical variables, and analysis of means calculated the average values of continuous variables. We used independent-samples T-test to test differences between two independent group means on a dependent, bivariate variable, and Chi-square test to test differences in proportions between two or more independent groups where data was at a nominal or ordinal level (149, 177). In sum, these descriptive analyses were appropriate to make relevant descriptions of the sample (189).

Frequency distribution and percentages were used for the respondents' evaluation of the five main outcome items. A frequency analyses assesses the number of responses on each score value on a variable (149, 177). The results are displayed in the results section. We also applied the Phi coefficient (177) to explore the correlation between the outcome variables, as an indication of whether the variables measured different aspects of the service. The outcome variables were dichotomous; therefore, Phi was an appropriate measure of correlation.

Logistic regression analysis explored and assessed possible effects of the various background variables on how the respondents evaluated the PHV service. Logistic regression transforms the probability of an event occurring into its odds, which is the ratio of the probability of something occurring, on the probability that it will not occurred. We initially performed simple logistic regression (SLR), to assess the relationship between each of the independent variable and each of the categorical dependent variables (177). We subsequently applied multiple logistic regression (MLR) to explore the relative effects of the set of background variables that had shown effect on the outcome variable in the SLRs. MLR uses mathematical calculations to control for the effect of each of the other variables in the model, to assess the "pure" effect of each background variable (177). Logistic regression was relevant because we wanted to explore if and to what degree the background variables were associated with the scores on the main outcome variables. The results from the regression analyses were reported in five tables in article 2 (189).

4.5 Study 3

4.5.1 Recruitment and participants

We wanted to interview nurses who had rich experience from long-time, annual PHV follow-up to a general population of older persons. The strategically sampled PHV service could offer such informants, and all the ten nurses employed in the PHV service volunteered to join the study. The nurses' background and competence is described in article 3 (190). Three nurses had worked in the service from the very beginning, and six nurses started when the authorities expanded the service to the entire municipality. One nurse replaced one of the regular nurses during sick leave. Even if she had conducted nearly 200 visits during 15 months, she was excluded from the sample because she lacked experience from long-time follow up of older users. The number of older citizens enrolled in the PHV service had gradually increased since the start. At the time of the interviews in summer 2011, the team of nurses offered at least yearly PHV to approximately 2000 older persons between 75 and 97 years. The sum of experience with conducting annual PHV was therefore considerable and all informants were indeed information rich (149).

4.5.2 Data collection

We applied individual qualitative research interviews to obtain nurses' experiences with performing PHV, because this method is suitable to obtain in-depth knowledge and gain an understanding of the meaning of each nurse's experiences and opinions (149, 152). The nurses chose where the interviews took place: three of the nurses preferred a meeting room at the university college where I worked, while the rest invited me to meeting rooms in their healthcare districts. They all agreed to tape-record the interviews. I had prepared an interview guide with questions relevant for the study's research questions, including the following themes: descriptions of their long-term health promotive and preventive work, the experiences of the users' problems and their benefits from long-term follow-up, what they perceived as important for positive outcomes with the service, and challenges in their work. The informants knew the aims of the study from the information in the invitational letter. I wanted the informants to talk freely about their work experience, and choose what topics to elaborate on to facilitate rich data. After the initial question "please tell me about your work as a PHV nurse", the informants willingly shared their experiences, opinions and reflections related to

their work. The informants were all skilled communicators, and several had prepared themselves for the interview and some brought “memory-notes” with topics they perceived as important to bring to the conversation. The informants therefore decided the main order of themes. I listened actively to their stories and asked follow-up questions, and strived to verify my understanding of what they told during the dialog. If appropriate, I asked questions from the interview-guide in natural places in the conversation, and checked the guide towards the end of the interview to make sure the themes were covered. Shortly after each interview. I wrote reflexive notes with general and specific impressions and ideas from the interviews.

4.5.3 Data analysis

The data material was substantial, and the transcripts covered 353 pages. Already during the interviews, I realised that the nurses’ stories about their work differed in several ways. Therefore, we chose to apply a content analysis strategy inspired by the Framework method, developed by Ritchie and Spencer (191). The Framework method is characterised by a matrix output with rows for cases, columns for categories and cells for summarised data. Figure 5 illustrate the characteristics of a Framework matrix.

	Theme A				
	Category 1		Category 2		
	Sub-category a	Sub-category b	Sub-category c	Sub-category d	Sub-category e
Informant 1					
Informant 2					
Informant 3					
Informant 4					
Informant 5					
Informant 6					
Informant 7					
Informant 8					
Informant 9					

Figure 5. Simplified Framework matrix applied in Article 3.

The Framework matrix provides a structure for reduction of the data amount to facilitate the analysis. The approach is a systematic analytic process covering several key stages: transcription, familiarizing, indexing/coding, identifying a thematic framework/categorisation, applying the framework/charting, and mapping/interpretation (191, 192). The Framework method is well suited for systematising large amounts of data while keeping the content and context of each interview intact. The matrix structure also gives easy access to comparing and contrasting data across cases as well as within each case (191, 192). The Framework method can be used as a flexible tool in several qualitative approaches because it has no particular epistemological, philosophical or theoretical connections, and thus fit our study well (192).

The analyses related to experiences of benefits from the long-term PHV called for a major focus on manifest content. Still, the judgements related to the sorting and sifting of data and to the steps in the categorisation rested on interpretative processes. The content analysis process is described in article 3 (190). The final Framework matrix (in Norwegian) is presented in appendix 7. A table of themes, categories and subcategories representing the findings related to the benefits is presented in article 3 (190) and in the Findings section in this thesis.

The analytical process related to the nurses perceives on the creation of benefits in a long-term perspective revealed that the question not only related to different categories, but also to several intertwined and dynamic processes across the categories. A thematic approach was therefore inappropriate to describe the findings. Instead we performed a comprehensive analysis including interpretation of the underlying meaningful content, based on comparing and contrasting the material horizontally and vertically, and relating this to the entire material while making analytic notes (191, 192). The main findings are presented as two metaphors illustrated with examples, presented in article 3 (190), and in the Findings section in this thesis.

4.6 Ethical considerations

In this study, the protection of the participants has been an important issue. The research was planned and carried out based on principles in the Norwegian act on medical and health research (193) and the Ethical guidelines for nursing research in the Nordic countries (194). The Norwegian regional committee for medical and health research ethics granted ethical approval for the study (ref. 2011/122b) (Appendix 5-6). The municipality's director for health

and social services approved and supported the study, and permitted use of the municipality's list of PHV users.

Recruitment and first contact with informants in study one and the sampling of respondents to study two were done by persons not else involved in the study and without connection to the home health care or PHV service in the municipality. In study three, we applied self-selection. Following the Helsinki declaration (176), all participants received written and oral information about the study, about the project teams' professional secrecy, about their right to withdraw from the study at any time and on risks, and assets to minimize risks connected to the participation in the study. All informants gave their informed consent to participate in the study. Except for the mailed survey study, the researchers ensured that the informants had understood the information before signing the informed consent.

We have protected the respondents' anonymity in the reports and publications from the quantitative study. In the reports and publications from the qualitative studies, we have strived to reduce the possibility for recognition of the informants as much as possible to protect their identity (175). Data are stored in accordance with current regulations (193) and used only according to the consent given by the informants, and we have strived to adhere to the Helsinki-declaration's claim for precision and correctness when reporting results in publications (176).

5 Findings

5.1 Study 1

The aim of study 1 was to explore older people’s perspectives on the benefits of PHV after long-time follow-up. The informants reported a variety of benefits, which fell within four main categories: To feel safe, to manage everyday life, to live well and to be somebody. Table 8 display the categories and sub-categories in the manifest content of study 1.

Table 8. Manifest content: Older people’s perspectives on the benefits of PHV after long-time follow-up.

Main Categories	Subcategories
To feel safe	To have a contact person To be looked after
To manage daily life	To be aware of risk factors and factors that promote health Help with continuing daily activities at home Help and support for overview and control and the preservation of autonomy To be prepared for future needs
To live well	Help maintaining relationships Help with continuing meaningful and joyful tasks
To be somebody	Help sustaining a role and upholding a preferred self-image Confirmation of value

To feel safe related to having a contact person they could call when needs occurred, and to be looked after by a competent, trustworthy visitor. To manage everyday life included a range of individualised initiatives that supported their ability to live independently. This could be various strategies and help to promote physical and mental health, support for mastery and autonomy, or provision of assistive devices and help with home modification to compensate for functional decline. To live well comprised individualised support to maintain or enhance social relations, or to continue joyful and meaningful activities. To be somebody included initiatives that helped the participants to sustain role, identity and a preferred self-image and confirmation of the intrinsic value of the participants.

We identified two latent themes. The first, “Living with an underlying, realistic concern about an uncertain future,” rested on what we read between the lines of the informants’ anecdotes about people they knew who had suffered loss of health and independence due to illness. This made the insecurity related to their own future relevant and realistic. The second latent theme was “Striving to maintain oneself as a person”. We found this theme through interpretation of hints and clues within small stories reflecting the informants’ preferred identities, and in small success-stories of how they still managed to perform self-defining activities, despite decline following the ageing process. The latent themes can be understood as main concerns among the informants, which represented a shared background for the manifest meaning.

5.2 Study 2

The aim of study 2 was to describe the experiences of PHV among a representative sample of receivers of the the service in a Norwegian municipality, and explore if the experiences, measured in five main outcomes of PHV, varied in relation to age, gender, socioeconomic status, self rated health, life orientation and perceived social support. The study sample consisted of 88 men and 73 women, mean age was 82.06 (SD 4.06), range 77-96. The sample is described further in article 2 (189). We measured the respondents’ experiences of the PHV service in five main outcome variables. Table 9 display frequency distributions and percentages from this analyses.

Table 9. Users’ experiences with the PHV service

N (%)	Do not know	Not at all	Minor	Some	Extensive	Total
PHV adds to my feeling of safety	78 (56.9)*	5 (3.6)	-	25 (18.2)	29 (21.2)	137 (100)
PHV support my ability to stay independent	35 (25.2)	11 (7.9)	8 (5.8)	59 (18.7)	59 (42.4)	139 (100)
PHV support my ability to live a good life in my own home	34 (24.1)	6 (4.3)	9 (6.4)	29 (20.6)	63 (44.7)	141 (100)
I am satisfied with the PHV service	17 (12.1)	4 (2.9)	3 (2.1)	31 (22.1)	85 (60.7)	140 (100)
PHV is important for older persons in the municipality	13 (9.0)	1 (0.7)	-	17 (11.8)	113 (78.5)	144 (100)

*The response alternative for this item was “no need for help with this topic”.

The analyses showed that the majority of users perceived benefits from the service, were satisfied with the service and perceived it as important for older people. We found relative high “do not know”-responses, in particular related to the benefits.

Analyses of correlation between the outcome variables revealed that the responses to the outcome variable ‘PHV adds to my feeling of safety’ were not significantly correlated with any of the other outcome variables. The variable ‘support for ability to stay independent’ correlated strongly with ‘support for a good life in own home’ ($\Phi = 0.75, p < .000$). ‘Satisfaction with PHV’ correlated moderately with ‘support for ability to stay at home’ ($\Phi = 0.41, p < .000$) and ‘support for a good life in own home’ ($\Phi = 0.39, p < .000$). Perceived importance of PHV showed somewhat lower correlations with the other three variables, which suggest a weaker link to positive scores on the other outcomes.

The multiple regression analyses showed, when controlling for the other variables in the models, the following significant results: For the outcome, ‘PHV contributes to my feeling of safety’: the odds ratio for answering yes increased for each year of age. The outcome ‘PHV considerably support my ability to stay at home’: those living alone had lower odds to answer yes than those not living alone, and those with poor physical health benefitted more from this outcome than the others did. For the outcome, ‘PHV gives considerable support for a good life in my own home’: those without children benefitted significantly more than those who had children. The scores on life orientation scale affected the outcome ‘overall satisfaction with PHV’: For each grade higher, the odds to answer ‘very satisfied’ increased. The last main outcome was ‘perceived importance of the service for older people in the municipality’. Those not living alone perceived the service significantly more important than those living alone, and those with poor mental health perceived the service more important than respondents with fair or good mental health.

In sum, the explained variance was modest, and we found few significant associations; each perceived benefit was associated with one or two sociodemographic/health-related factors, and these were different for each benefit. There was no consistent association between any background variables and benefits from all the outcomes from the service. The findings therefore indicated that the outcomes represented various aspects of PHV and the service responded to diverse, individual needs and preferences among the users. Our findings thus support comprehensive PHVs with individually tailored support to a general population of older persons.

5.3 Study 3

The aim of study 3 was to describe nurses' perspectives on how long-term follow up with annual PHV can generate benefits for a general population of older persons in a Norwegian context. The study revealed that the nurses gave individualised support for varying needs during the aging processes, and the manifest thematic content analysis disclosed that the PHV service could generate a multitude of benefits reflecting a comprehensive understanding of health and health promotion. The benefits fell within three themes, and covered benefits for the users, their relatives and for the health care services. Table 10 present the themes, categories and subcategories of the benefits.

Table 10. The PHV nurses' experiences of benefits from long-term follow up.

Themes	Main categories	Subcategories
Sustained ability to live independently and thrive in own home despite age-related changes	Sustained physical health and functioning	Strong body, less disease and bodily complaints
		Fewer falls and accidents
	Feeling of safety, sustained thriving and mental health	Accept and use assistive devices for mobility and sustained physical functioning
		Trust and positive relations to the nurse and the municipal health-care services
Sustained coping ability	Increased ability to care for relatives	Enabled to participate in joyful/meaningful activities and fulfil social needs
		Eased mental burdens, emotional, social or relational problems
		Strengthened autonomy, self-esteem and self-efficacy beliefs
Eased transition to other health-care services	Preparedness for transitions to other health-care services	Knowledge and skills necessary for coping and independence
		Function-friendly and safe homes
	Improved continuity and quality of care during transitions	Caregivers have sufficient knowledge about health care issues
		Psychosocial support and respite care uphold caregivers' health and well-being
Improved health-care service planning	Overview of the older population	Users/relatives have knowledge and realistic expectations to the new services
		Flexible transition to increase feeling of trust and security
		Transfer of adequate information about users from PHV
		PHV nurse assists in problematic situations between user/relatives and the new services' staff

The majority of benefits related to the first theme: ‘Sustained ability to live independently and thrive in own home despite age-related changes’. This theme covered four main categories, which described results of the nurses’ long-term health promotive work with individuals and their close environment, and operationalized the stated aims of the service. The categories included sustained physical health and functioning, feeling of safety, sustained thriving and mental health, sustained coping ability, and increased ability to care for relatives with dementia. Some overlap existed between the categories, some aspects of benefits within a category could influence other benefits, and the categories were to a certain extent interdependent. The second theme was ‘Eased transition to other health-care services’. This theme covered benefits related to the processes of transferring users from PHV to other healthcare services if or when a users’ ability to live independently eventually failed. The theme included two categories: ‘Preparedness for transitions to other health-care services’ which was about the users’ and their relatives’ benefits, while ‘Improved continuity and quality of care during transitions’ included various benefits for the healthcare services. The third theme was ‘improved health-care service planning’. The PHV nurses’ repeated contact and assessment of the majority of the municipality’s aging population gave opportunities to keep the healthcare leaders updated and able to plan future healthcare services.

A comprehensive analysis and interpretation revealed that the creation of benefits from the long-term PHV service rested on complex, longitudinal relational and professional processes, and were influenced by a range of factors. The underlying, meaningful content of the nurses’ long-term experiences with creating benefits for the users could be described in terms of two metaphors: “The processes of establishing, sustaining and widening a longitudinal room of possibilities”, and: ”The Individualized health promoting processes: the ongoing gardening work”.

5.4 The convergence of evidence

This case study have gathered rich and in-depth information from several perspectives on the PHV service under study (149, 151). A case study aims to combine and compare the findings from the sub-studies to give a convergent answer to the main aim. That is, to describe how this particular long-term PHV service affected older persons’ health and possibility for a good life in their own homes (150, 151, 153, 154). First, we present the convergent evidence of

benefits from the longitudinal PHV service. Thereafter we present a model that describe the various factors that influenced the creation of benefits from the long-term PHV service.

The triangulation of evidence showed a high degree of corroboration between the users' and nurses' perceptions related to what benefits the PHV service could assemble. Strong evidence support that the long-term individual follow up represented a stable, safe support during the aging processes and the majority of users appreciated the service. The nurses' support resulted in perceived benefits for considerable proportions of the users related to feeling of safety, a good life/well-being, and managing daily life /coping ability/functional ability (162, 189, 190).

The users' main category of benefits: to be somebody, had no direct equivalent in the material from the nurses, and the nurses' benefits related to caregiver support and preparedness for transitions to other health-care services were not found in the users' perspectives, and none of these benefits were applied in the survey. Still, there is reasons to believe these benefits are relevant for the service. Variations in the content of the subcategories extended the understanding of the content of the main categories of benefits. The convergence of evidence therefore extended and nuanced the understanding of benefits from the long-term PHV service. The benefits related to subjective health as well-being, and health as a resource for coping and a good life, and to some extent to objective health as absence of disease. The knowledge from the case thus reflect and support a comprehensive understanding of health and health promotion in longitudinal PHV services.

The various sub-studies in this PhD study have described different aspects related to how benefits were created in the long-term PHV service. Based on a comprehensive analysis of the material, we developed a model of the factors that influenced the creation of benefits from the long-term service (Figure 6).

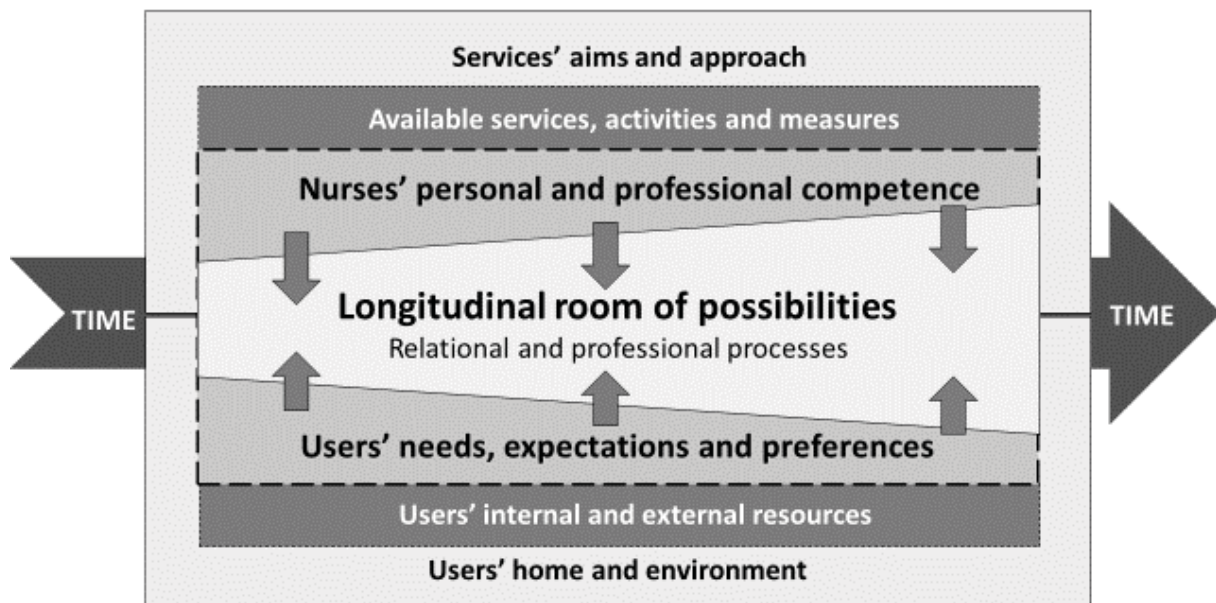


Figure 6. Model of factors influencing the creation of benefits from the long-term PHV service.

The central area in the model is ‘the longitudinal room of possibilities’, which is a metaphor for the ongoing, collaborative relationship created in the line of meetings between the nurses and the users over time, and which was found to be a precondition for the creation of benefits (162, 190). The upper half of the model represent aspects related to the nurses’ work: The outer frame is the services’ aims and structural approach, which shaped the formal boundaries of the service. Within these boundaries, the nurses had access to a certain row of available resources that might be utilised to support the users’ needs, including other healthcare services and local activities and measures for older people. Directly above the room of possibilities is the nurses’ personal and professional competence. In sum, this part of the model illustrates the nurses’ potential to influence the older persons’ health and independence. The lower half of the model represents aspects related to the service users’ participation in the cooperative processes. The outer frame is the user’s home and environment that formed each user’s physical context. Within this, the users had individual internal and external resources. Directly below the room of possibilities is the users’ needs, expectations and preferences related to the service. In sum, these aspects defined the users’ need for support and influenced their capacity to utilize the service and to create benefits that contributed to sustained health and ability to live independently.

In the longitudinal room of possibilities, the users' expectations, preferences, and changing needs and problems during the ageing process repeatedly met the nurses' personal and professional competence. This resulted in intertwined and mutually dependent longitudinal relational and professional processes that ran through the room. The sum of these processes made up the quality of the collaborative room, and set the limits for the processes of creating possibilities to support the users' health and independence. If these processes ran well, they would develop and strengthen the collaboration over time and thus widening the room of possibilities. The possibilities created could or could not result in positive outcomes for the users, depending on the quality of the processes in the room as well as the surrounding factors presented in the model.

6 Discussion

The main aim of this PhD study was to explore and describe how long-term preventive home visits affect older persons' health and possibility for a good life in their own home. The findings from the study raise several important topics for discussion. The main objective in the discussion of a case study is to make clear what we have learnt from this particular case (150) and seek to generalize the findings to a broader theory (151). The interest in PHV is rising, and one of the PhD study's objectives was to generate knowledge about a longitudinal PHV model to support informed decisions about PHV services. I therefore will include the findings from the case study in a more generalised discussion related to decisions about of PHV services. Thereafter, I will address the epistemological and methodological considerations related to the quality of the study.

6.1 Results discussion

6.1.1 A Model to support decisions about PHV

In this thesis, we advocated a comprehensive, longitudinal approach to PHV, with complimentary disease preventive and health promotive aspects. Municipalities differ considerably, and I share the view that health care services, including PHV should be adapted to local needs and situations (5). Therefore, I will not insist on a "best practice"-model for all. Based on knowledge gained through this PhD study and relevant literature, I suggest a generalized model of central elements in decision-making processes about PHV. The model illustrates the complexity and interconnectedness of factors that influence potential outcomes of PHV services, and therefore should be taken into consideration in decisions about PHV. After describing the model, I will reflect on and discuss the implications of some choices related to the elements in the model. The case study have generated knowledge relevant for several of these choices, and findings from the case will therefore be central in the discussions. Figure 7 illustrate the model.

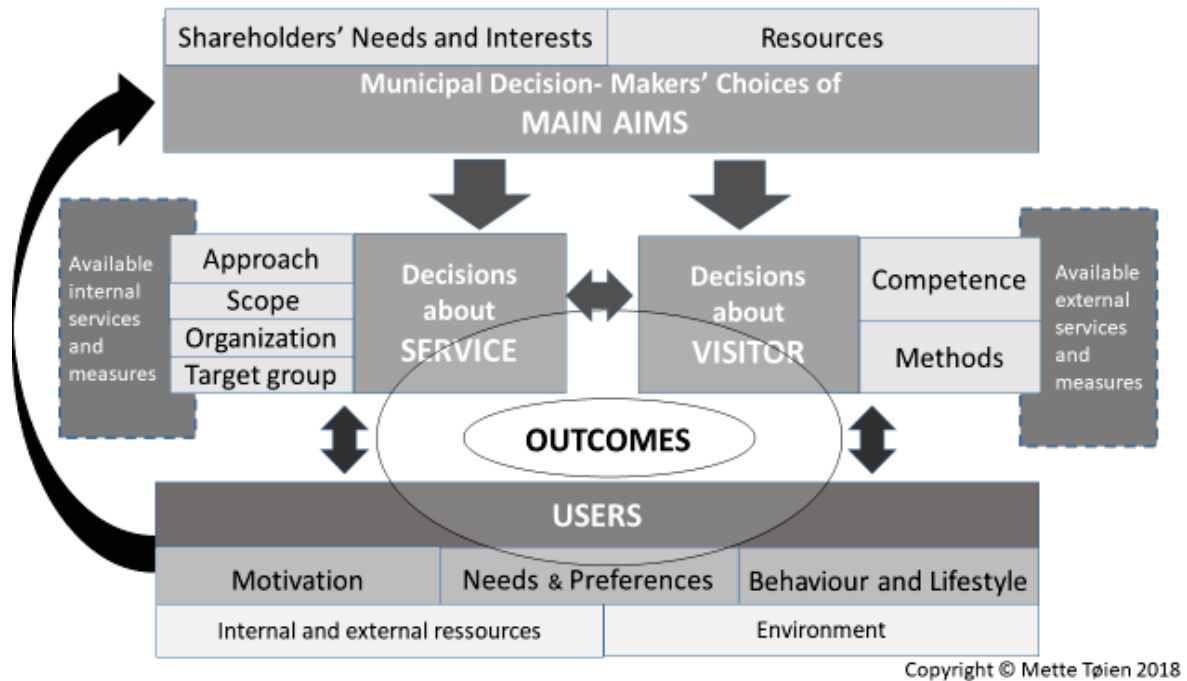


Figure 7. Model of central elements in decision-making processes about PHV.

The model may be relevant in Norway and in countries with similar health care systems and socioeconomic conditions. The model may support decision-makers at different levels within community health care to set realistic, clear and adequate aims for their PHV services, and to develop their services in ways that most likely will produce outcomes that are valuable for the users and other stakeholders. The model may also be useful in evaluations of PHV services.

6.1.2 Description of the model

The upper level of the model refers to the decision-maker level in the municipality, who defines the main aims and allocates resources to the service. The decisions about main aims depend on judgements of which needs and interests the service should fulfil. Available resources, especially related to health care personnel and economy set the limits for what is possible to achieve. The model indicates a strong influence of the decisions in the upper level, on the choices at the next level, because the main aims determine the scope of the service and the competence and working methods necessary to produce relevant outcomes (58).

The central level in the model represents the structural characteristics of the service. Choices at this level define who the service is for, whether focus is on health promotion or disease prevention or both, the degree of comprehensiveness of the service, the frequency of visits

and how and where the PHV is organized within the municipal services. Different health care professions possess specific competences and methods, and choice of profession defines the service providers' capability to carry out the PHV. Choices of visitors are therefore connected to decisions about the service, and vice versa. The adjacent dark box on the left side illustrates other existing municipal services and measures relevant for older people. The municipal decision-makers control the range and capacity of these, and the extent to whether and how they might be utilized to reach the aims of the PHV. The dark box on the right side of the model displays external resources in the community, such as local organizations and voluntary services. The use of these depend on the visitors' local knowledge and initiatives. The sum of decisions at this level defines the operational service offered to the users.

The lower level of the model represents the service users, and illustrates the diversity of their individual needs and preferences, motivation, life style, health behaviour, resources and environmental context. The transparent circle represents the outcomes, which are created in the space between the characteristics of the service, the visitor and the user. The amount of value created depends on the degree of fit between the users' needs, preferences and expectations and what the service offers. The arrow on the left hand side of the model illustrates the importance of including the user-perspective in the decision on main aims.

6.1.3 Choice of main aims for PHV

The aims for the PHV service in this study (the case) included the promotion of older persons' health, thriving and independence. This wide aim allowed the nurses to apply various strategies and promote various aspects of health (162, 190). The review of the literature showed that the aims of the PHV interventions varied (Appendix 2 and 3). In democratic societies, representatives of the general population, the target group, the municipality authorities and health care leaders have legitimate influence on decisions about health care services (58). When planning aims for PHV, these various stakeholders advocate aims that fit their interests and needs, and thus often results in combinations of aims directed at benefits for various stakeholders. Our study has illustrated the importance of including the users' perspective in decisions about aims, delivery and evaluations of PHV, because all outcomes depend on the users' judgements of usefulness and relevance (106, 162).

To improve or sustain older peoples' health is the most common main objective in PHV. Health has an intrinsic value, and to improve health is a main obligation for health care

personnel. Health is a wide concept and the way health is perceived has consequences for how health might be improved. This main aim may be specified into more or less specific objective aims related to reduction of morbidity, subjective aims related to well-being or mastery, or combinations of such aims. *To improve older persons' ability to stay independent* is another broad aim, often combined and overlapping with health-related aims because independence may be at least partly related to physical and mental functioning. More specific aims therefore often relate to *improved ADL functioning*, but may also relate to psychological aspects, such as to *strengthen autonomy*, or to *make the home more function-friendly*. The aim of independent living is often followed by aims of *reduced/delayed need for institutionalization or more costly home healthcare services*, which mainly relates to the society's needs to save resources.

A different health aim is *To contribute to more equal distribution of good health among older persons*. A social imbalance in distribution of health exists worldwide, and those with more resources and higher education have better health and function in general, and more often utilize the health care system better than less privileged citizens do (121, 122, 195).

According to WHO and national strategy documents, health care services, in particular health promotive measures are obliged to contribute to a more equal distribution of health in the population (32, 41, 133). This aim is, however seldom reported in PHV trials.

Cost savings are often an anticipated aim of PHV. In the existing strained economic situation, introduction of new health care services can be eased if they lead to cost savings – or at least if they produce good value for money (58). It sounds reasonable that improvement of older persons' health may result in less healthcare expenses. Economic evaluation of PHV services are, however, often problematic because no consensus exists regarding which costs and benefits to include, and what time perspective to apply (43, 121, 122). Very few have undertaken full cost-benefit-analyses to decide 'value for money' (4). Outcomes of economic evaluations also depend on a society's willingness to pay for potentially achieved benefits (58, 122, 196).

A PHV meta-analysis found *reduced nursing home placement* which gave cost savings, but only in older studies (51). In Norway, the threshold for nursing home placement varies between municipalities, but is often very high (197), and new national health care strategies advise to restrict nursing home placement to those with the poorest function (198, 199). The majority of persons assigned to nursing home placement in Norway had cognitive impairment

with severe behavioural and psychiatric symptoms (200). Such conditions are difficult or impossible to prevent (91). Reduced nursing home placement is thus probably not a very relevant aim for PHV within current healthcare policy, but knowledge about local criteria for nursing home placement is necessary to make sound judgements.

Today's public elderly care focus on ageing at home, and a more relevant economic aim may thus be *to reduce the sum of all costs for elderly care*. In a Swedish cost-effectiveness analysis of a nurse-led PHV intervention, the sum of costs were justified by the outcomes. Long-time effect on the users' ability to manage everyday functions *reduced the need for elderly care* and contributed positively in the evaluation (80). In our study, the majority of PHV users reported support for independent living (162, 189, 190), which might have reduced municipal health care expenses similar to in the Swedish study. However, the evidence for economic benefit from PHV is weak. An excessive focus on economy might blur the fact that the main aim for healthcare services is to improve the population's health. If cost savings and limitations of healthcare use are main objectives, this might lead to unfavourable and unethical care practices (44). Some researchers therefore advice against leaning too hard on presumptions of PHV as a way of saving money (87, 91). Instead, I support that PHV should be viewed as a health care service with a unique potential to support the aging populations' health and well-being.

6.1.4 Decisions related to the structural characteristics of PHV

Target group

It is debated whether a general population approach or a risk-based strategy is the most effective in a population perspective (122, 123). The aims, approach and available resources influence choice of target group, and several researchers have called for identification of optimal subgroups for PHV (64, 93, 123). The choice of starting age will influence the total number of users, in particular for services with long-term follow up. Annual visits from age 75 offer possibilities to assess the users' situation, rise their awareness about important issues related to sustained health and independence and establish trusting relations before severe health problems appeared (162, 190). The general improvement of older persons' health might legitimize to start PHV at a somewhat higher age, but this will limit the possibility for early intervention, and life style changes can be difficult in old age (190).

Frailty and falls are associated with risk of dependence, and many PHV studies have thus focused on these groups. Even if evidence exist for a possibility to prevent falls and improve frail or disabled persons' function and independence (64, 71, 91, 201), evidence from disease preventive interventions tends to favour general populations (60, 64, 73, 91, 202). Arguments for a general population approach is that aging in itself represent increased risk of disease, reduced well-being and functional decline, which health promotive/preventive measures might modify. Our study illustrated that longitudinal general-population PHVs include users with all stages of function and frailty, life situations, resources and physical surroundings, which influence individuals' needs for support, their possibility to contribute in the co-creation of benefits, and to utilise the PHV service (162, 189, 190). We also found small differences in perceived benefits of the service among subgroups of the users, which indicated that the service met various needs among the users (189), and a Dutch study found only slightly more health and well-being problems in the at-risk part of the population than in the general population (93). Several studies therefore support a general population approach, and tailoring the service to individual needs (4, 43, 45, 47, 82, 86, 162, 190, 203). Provided sufficient resources, many arguments thus supports a general population target group.

The follow-up approach of the service

There is no consensus on follow-up of PHV, and in Norway, many municipalities offer a single visit PHV (62). Whether to choose single visits or repeated visits depends mainly on available resources, most of all the capacity and competence of the professionals needed to carry out the service. The results from the case study shed light on the relations between follow-up strategy and potential benefits from PHV.

The case study identified a broad array of benefits for users from the long-term PHV follow up, which related to different theories on health promotion and disease prevention (162, 190). With exception from benefits related to physical function, the benefits found in our study were seldom used in RCTs. However, various qualitative PHV studies, the majority on single-visits PHV, had identified similar benefits related to well-being and coping as in our study. If the same benefits were found in single-visits PHV, what is the point of conducting long-term follow up? A closer comparison showed certain differences in the content of the benefits which could be related to the approach.

Increased feeling of safety/security/control found in several Scandinavian single PHV studies related to information from the visitors, which increased the users' knowledge about future health care services, and about how to get help if something happened (81, 107-112, 115). Our study found that in addition to these aspects, feeling of safety related to the personal relation and being looked after regularly (162). We also found that the importance of support for feeling of safety increased with age, probably because getting older in many ways imply increasing insecurity (162, 189).

In single PHV-studies, benefits related to managing everyday life/coping ability/physical functioning included increased knowledge about home modification/assistive devices, and/or an incentive to make health promotive changes (81, 82, 107, 113, 115). A quantitative study of one of these single-visits interventions showed positive effect on physical functioning up to two years (99, 103). In the case study, these benefits included a broad variety of aspects, and we found that the users' resources and motivation influenced on the creation of benefits. Some users made health promotive changes as a response to the nurses' general information and awareness-rising, probably similar to respondents in Behm's study (103). However, many older people found this difficult, and needed individualized, longitudinal, support for various adaptation- decision- and changing processes. If these efforts failed, the nurses could offer help to compensate for functional decline that emerged over time (162, 190). Qualitative studies of longitudinal PHV services confirmed that repeated, tailored support for individual processes was important for positive changes (43, 83, 94). Several reviews of RCTs assessing functional ability therefore recommended multiple follow up and tailored support (71, 88, 91). Results from the PRO-AGE-study concluded that a certain "dose" of reinforcement follow up was necessary for long-term effect of a risk-based healthy lifestyle-intervention (97).

Few single-visit studies reported benefits related to psychosocial well-being and emotional matters, but these benefits were found in several longitudinal PHV studies, including studies that intended to focus on physical functioning or disease prevention (81, 83, 84, 106). These benefits respond to widespread needs in the older population (204-209). Several studies confirm our finding that some users need time to develop sufficient trust to talk about private issues and sensitive problems (30, 106, 112).

These discussions show that a single-visits approach limits the health promotive strategies to information and support for the problems and needs that are visible at one point of time in the aging process. Long-term follow up give possibility to assess the users' situation repeatedly during the entire aging process, and allow the use of multiple health promotive strategies including support for long-term processes. It therefore seems likely that long-term PHV can create benefits for larger proportions of users', a larger variety of benefits related to important areas for the older users, and benefits tailored to changing needs and situations.

We could not find benefits related to support for informal caregivers, or to eased transitions to other healthcare services in previous PHV literature. This therefore seems to be new findings. The evidence for caregiver support to sustain the caregivers health and reduce need for professional care is well documented (210, 211), and already in 2006, Markle-Reid and colleagues strongly advised to include caregiver support in health promotive nursing interventions (4). The interest in transitions as a phenomenon in aging is increasing, and in particular the problems related to transitions between different healthcare services (212-214). It is interesting that the latest quality reform from the Norwegian ministry of health and care services published in May this year call for more caregiver support and more flexible transitions from home to other health-care services (199). We therefore consider these new findings important as it opens for interesting clinical possibilities for use of longitudinal PHV services.

The approach of the service and the service providers' competence

The PHV service in the case study had a predominantly health promotive approach, but included certain preventive aspects, mainly related to reduction of home accidents, and the service providers were experienced, well-educated nurses. The discussion will explore the relations between service approach, the service providers' professional competence and outcomes from PHV.

Aims related to improvement of subjective health relate to various aspects of well-being, which require a health promotive approach. This approach may also be appropriate to realize aims of independence. Health promotive approaches require knowledge about various theories related to positive health and health promotion, well-being and coping, as well as training in how to identify and strengthen older persons' health resources for coping and a good life. Support for independence will often focus on the psychological and mental capacity

for independent living, including support for empowerment and autonomy (121, 215). In addition, support for physical mastery of everyday living may be relevant, such as general information and advice on physical activity and healthy eating, advice and help to make the home more function-friendly and supplement of assistive devices to compensate for impairment. RNs, in particular specialized RNs have a broad competence that cover this approach and OTs possess expertise on support for mastery of ADL.

The benefits from the case study is described previously, and we found the outcomes related to feeling of safety, a good life and managing daily life relevant for evaluation of the (mainly) health promotive PHV service. Other relevant outcomes include quality of life /well-being, measures of autonomy/empowerment, ADL/self-care ability and independent living. The few effect-studies that measured subjective health outcomes from PHV reported mixed results (4, 47, 89-91). Therefore, a possibility, but no guarantee, exists for positive outcomes from health promotive PHV services. Several subjective health aspects might affect morbidity and mortality (216-218). Still, one should not expect health promotive initiatives to have significant effect on individual disease or mortality within a short time frame. Expectations related to objective health outcomes are therefore inappropriate if the PHV solely apply health promotive aspects.

Aims related to improvement of objective health require a disease preventive approach, and requires capability to perform relevant assessments, interpret the results and identify correct measures to modify risks, treat disease or reduce consequences of disease that may lead to physical decline and reduced ability to stay independent (23, 121, 122). Preventive medication for diseases, physical training, health education and advice for life style changes or altered behaviour in line with a 'healthy aging' ideology is often the 'prescribed treatment'. Diagnosing, preventive medication and treatment of disease is within the medical jurisdiction, and if such preventive aspects are sought in a PHV, direct involvement or close cooperation with GPs is needed (85, 117, 219, 220). The possibility for such involvement vary because GPs' mandate and role in primary health care differs between countries. In Norway, GPs are not part of the municipality health care services, and proactive initiatives towards health promotion and disease prevention are not part of GPs' obligated duties (221). Our study demonstrated that lack of formalised cooperation with GP contribute to limit the disease preventive focus in PHV (190). A study from Denmark, where PHV is legislated and the GPs have defined responsibilities within the services, found that an educational intervention

strengthened GP and service providers' cooperation and improved the effects of PHV (222). The degree of reciprocal knowledge and respect between GPs and nurses has similarly proved to affect patient outcomes in hospital settings (223).

Specially trained nurses can perform MGA and carry out relevant preventive interventions (5, 93, 220, 224). The international trend to educate nurses to new and more advanced roles in the primary health care system has also reached Norway (42, 225-229). Advanced practice nurses (APN) possess an advanced level of biomedical knowledge and skills in clinical assessment (145, 230), and the use of APN in PHV open for innovative developments of the service. The government have initiated testing of primary healthcare teams of GPs, health secretaries and APNs (42). PHV to vulnerable patients are suggested a part of the nurses' responsibility, and may facilitate inclusion of disease preventive strategies in PHV. However, a risk exist that PHV in this context will be reduced to a medical home visit.

Relevant outcomes of preventive PHV services may be various indicators related to diseases, functional status, falls, hospital admissions and institutionalization. In addition, mortality is often used as an indicator of objective health status (20, 123). It is appealing to believe that early detection of risk and disease can prevent functional decline. Several screening instruments relevant for various scopes of PHV have proved to be acceptable and effective in detection of risks and early stages of diseases, see for instance (93, 231-234). Older persons may have very different priorities than healthcare personnel, and several studies have shown that they find evidence-based recommendations for risk preventive measures inappropriate or in conflict with own values (83, 86, 117). This contribute to explain the inconsistent effects from preventive PHV trials, and the far from one-to-one relation between detected risks and problems in screenings, and positive outcomes for the users (48, 51, 91, 123, 235). Our study have demonstrated that older persons' readiness to make changes vary, and may involve complex, long-term processes (190). Positive objective health outcomes from preventive PHV interventions are therefore possible, but should not be taken for granted (48, 51, 91).

Various professionals possess specialized competence. To overcome limitations in service approaches following any choice of professional group as visitors, some researchers have advised to apply interdisciplinary teams to perform PHV (64, 90). Albeit this could ensure highly competent and comprehensive services, it might be unrealistic in a resource perspective. Another possibility to allow for interdisciplinary cooperation is to provide special training to the visitors that enable them to uncover needs for follow up by other professional

groups. A precondition for this approach is a possibility to refer the users to easily accessible relevant internal or external services (91, 162). Good cooperation and possibility to refer users to OTs or PTs was important for the creation of several benefits in the long-term PHV service in this PhD-study (162, 190). Other studies suggest employing health care professionals with as broad education as possible, such as RNs with additional formal training within geriatric health care, district nurses or Nurse practitioners / Advanced practice nurses (4, 236). Considering the high competence of the nurses in the PHV service under study, a small competence investment could enable the nurses to strengthen the focus on disease prevention and improve the service even more. Such an extended scope would, however require acceptance and close cooperation with GPs. In sum, the interdependent choices of service providers and approach and scope of the visits, whatever the result will be - will define and delimit the potential outcomes from the service.

6.1.5 The production of outcomes

Findings from the present PhD study has revealed that outcomes of PHV are results of dynamic processes related to the content, aim and scope of service, the service providers' competence and working methods, and the user's needs and preferences, motivation, resources and environmental context, as illustrated in Figure 6 and 7.

Irrespective of choices of aims, approach and service providers, all outcomes from PHV depend primarily on the target group's acceptance of the service, which rests on their judgements of relevance and usefulness. Clear and precise descriptions of the aims and content of the service in the invitation to PHV will produce realistic expectations and is therefore essential (113). Initial acceptance rates also depend on choice of invitation procedures. A mailed invitation with a proposed first visit has demonstrated higher and less socially imbalanced acceptance rates than recruitment resting on the older persons' initiative (92).

The cooperation between the visitor and the user

The case study shed light on relational processes involved in long-term PHV. Such processes are independent of the service providers' profession.

We found that a constructive, longitudinal trustful cooperation between the nurses and the users was a precondition for the creation of benefits from the long-term PHV service (162, 190). The establishment of such ‘rooms of possibilities’ included developing shared understanding of the service’s aims and roles. The nurses experienced that some users had a rather vague understanding of the PHV service in the first visit, which was confirmed in a previous study (113). Several PHV studies have found that poor understanding of the aims and roles of PHV could reduce acceptance and utilization of the offered service (83, 106, 113).

The users’ experiences during the first visit decide whether they will continue to utilize the service (107, 113), and how the service providers performs the first visit is therefore critical for the establishment of a longitudinal cooperation. Good communication skills and a positive relation based on trust was deemed necessary for a constructive dialog, and was consistently judged as facilitators for positive outcomes of PHV and similar interventions in qualitative studies (30, 47, 82, 94, 106-108, 111, 116, 203, 237-239).

Findings from the case study nuanced the role of trust in PHV. While trust based on professional role and competence was sufficient to accept the service and discuss most problems and needs, willingness to reveal more sensitive topics was restricted to visitors they knew and who had proved to be personally and professionally trustworthy (162, 190). A US study of trust in community health care similarly found that a spontaneous trust in health care personnel was related to role and competence, while a deeper trust depended on the visitors interpersonal caring attributes (240). These findings are consistent with the content of the concepts ‘competence trust’ and ‘companion trust’ from theory on trust within other fields, which states that companion trust can only be earned through experiences within a relation over time (241).

The nurses had experienced that the users’ readiness for constructive cooperation differed. Some users could tell very private matters during the first visit if they experienced “good chemistry” with the nurse. The majority of users needed some time to judge the nurses’ trustworthiness, and some needed several visits before they would engage in a constructive alliance with the nurse (190). Similar findings were reported in three other PHV studies (30, 106, 112). The infrequent visits in the PHV service under study could thus delay some users’ optimal utilisation of the service. Research on continuity of care in home health care settings confirms a positive effect of interpersonal continuity on various patient outcomes (242-244).

Several reviews of RCTs concluded that multiple follow up improved positive outcomes from PHVs (49, 60, 71, 91), but did not include information on continuity of care or relationship quality. Still, we suggest that long-time follow up and continuity of visitors might facilitate a wider scope of beneficial outcomes for the PHV users.

The users and nurses described that the quality of the relationship varied (162, 190). Studies of relationship building in home care found that the receivers of care were active participants in the process and controlled the level of contact (203, 245-247). Despite the infrequent visits in the PHV, several of the long-time users described the relation with the visitor ‘almost as a friend’ and as valuable in itself. Similarly, reciprocal relations and emotional bonds were found to be valued results of the relationship-building process in ordinary home care settings (237, 245). Some of the PHV-users in this study told that relational aspects had motivational power. Other researchers have likewise found that relations characterized by perceived emotional connectedness enhanced client involvement and the quality of care, explained by social exchange theory (237, 245).

We found that the nurses’ personal competence, their appearance and behaviour during the visits as important for establishing and sustaining the longitudinal room of possibilities. This included supporting the users’ autonomy, and respecting the users’ right to decide their own lives (162, 190). The importance of the dynamics of social and relational aspects of health care delivery was explored in a study from UK (248). The study confirmed that the characteristics of the visitors, the way they performed the services and how they related to the patients had important effects on the patients’ identity, self-evaluation and behaviour. They concluded that social and relational dynamics of individualized service provisions affected the opportunities for each person ‘to be who I value being and do what I value doing’ (248). This resembles the latent theme identified in study one; ‘striving to maintain oneself as a person’ which described a main concern for the informants and a background for the benefits they experienced from the service (162).

Also a review of research within self-determination theory sheds light on the role of the relationship between health care providers and patients for health outcomes (249). A main conclusion was that more relationship-oriented care resulted in increased probability for patient satisfaction, adherence to prescriptions and advice, more maintained behaviour change, and better physiological and physical health. Relationship-oriented care focused on support for each patient’s autonomy and autonomous motivation based on understanding of

the patients' perspectives, responsiveness to the needs of patients, and sharing treatment-relevant power with the patient (249). A recent meta-synthesis of qualitative evidence related to prevention of frailty, similarly concluded that a bottom-up approach and person-centred service provision, psychological- and communication skills and support for autonomy was necessary for effective and satisfactory use of health-care services (239).

In all, these aspects strengthen the argument for long-time follow-up, continuity of the relationship and high professional and relational competence in PHV services. These factors allow for a co-construction of trustful and reciprocal relations as a fundament for individualized support and motivation for creation of benefits and achievement of goals the older person judge as valuable. The cost related to necessary time for the building of a constructive relationship between the visitor and the PHV user is a necessary investment to achieve high quality service and a broader range of beneficial outcomes later on (237).

The professional health promotive work

We found that aging often involved vulnerability and psychosocial needs and the professional supportive conversation could produce positive outcomes for the users, such as strengthening of self-esteem, relieved mental burdens, trust in own ability, feeling of safety and support for various elements of well-being (162, 190). Aging often generate need for constructive adaptation and changes. Irrespective of approach, the conversation during the visits might result in information, advice, treatment recommendations or referrals based on the visitors' professional knowledge about what could promote the users' health. It is whether and how the users utilise this knowledge, adhere to recommendations, and alter their behaviour that determine the outcomes. The majority of benefits from PHV therefore depend on what the users do after, or between the visits, as a result of these visits (162, 190).

We found that resourceful older persons often lived perfectly health promotive lives and adapted constructively to age-related challenges, while less fortunate older users could find life-style changes difficult (190). This reflect socioeconomical differences in health and health behaviour found worldwide (32). A Norwegian study did not provide support for the assumption that the onset of a chronic health condition would trigger improved health behaviour, especially related to physical activity (250). Similarly, detected visual and hearing impairment did only to a limited extent result in adherence to advice given (251). Several studies indicate that older persons' willingness and ability to make changes in their life might

be limited, but still possible (250-254). To reduce health inequity based on differences in health and resources, WHO recommend preventive programs to be universal, but with attention and intensity that is proportionate to needs (32). It is difficult to see how this can be achieved in single visit PHV services, which instead might risk to increase differences in the older populations' health.

We found that several of the older persons actually had made changes in their lives as a result of the PHV. The main clue to this was the longitudinal, individualised support they received for outcomes that mattered to them, and which contributed in various ways to their desire to sustain the persons they wanted to be (162). A recent review found that older people might doubt the possibility of preventing frailty, or whether the required efforts is worthwhile, and thus underscored the need to address the users' beliefs and opinions related to these aspects (239). Perceived important goals gives meaning to the striving of behaviour change (255), and a visitors' support for these goals enhances the ability to succeed (256). Therefore, ability to identify problems and needs is insufficient; the service providers should be able to explore each older person's preferences, goals, values and resources, and to make decisions together with the users about initiatives and support according to these (86, 257).

Knowledge of various motivational theories may guide the service providers in supporting older persons who want and would benefit from changes in their lives. Antonovsky's theory on salutogenesis explains how support for understandability, manageability and meaningfulness may enhance the person's capacity and motivation for health promotive behaviour (135), while Bandura's theory focuses on support for a person's belief in their own capacity to carry out the change, their self- efficacy (258, 259). Self-determination theory may also be helpful: Support for autonomy, social relatedness and knowledge will increase perceived ability to reach goals, and strengthen the autonomous motivation to do so (260, 261). Motivational interviewing has proved to be helpful in supporting life-style changes among older persons (262-264).

Another important finding in the case study was the importance of accessible relevant services and measures that may constitute relevant and acceptable support for sustained changes and thus for positive outcomes (162, 189). This comprise municipal services and activities for older persons, but also the scope of arrangements and measures for older people run by organisations and voluntary groups in the society. Lack of adequate services, capacity

problems and lack of transportation can hinder participation for persons with functional limitations (189, 204). A consistent municipal health promotive policy and coherent healthcare services are therefore necessary for maximizing the PHV's potential to improve older persons' health and independence.

6.2 Closing reflections on PHV services

Unsuitable outcome measures can give false results of interventions (149, 265), and several researchers have raised questions about which outcomes are the most appropriate to apply in evaluations of health promotive interventions. Instead of the one-sided focus on objective health outcomes, they have suggested a broader focus including patient focused outcomes (4, 47, 51, 64, 91, 106, 184, 265). Several recent studies support this view. Dutch older people found positive health outcomes such as autonomy and self-sufficiency to be relevant (266), older British informants preferred aims related to social networks, mobility and well-being, and wanted information, psychological and practical support (204), and a recent meta-synthesis strongly advised to focus on resilience, acceptance and coping (239). The reluctance to include older users' perspectives in planning of services as well as in research (91) may reflect professional arrogance or even an aspect of ageism. The legislated rights to participate and stated focus on shared decision-making and patient centered services in national strategies and international recommendations seems still not to be fully integrated (41, 42, 53, 146, 199, 267).

Our study has demonstrated that a long-term PHV service produced a broad range of beneficial outcomes for the users, within a variety of health related areas that mattered for them. These benefits had the possibility to improve users' health and independence in a multitude of ways. The outcomes reflected aspects within a comprehensive understanding of health with a main focus on promoting the users' well-being and coping ability, and demonstrates the value of including various health promotive strategies in PHV. Evaluations with outcomes related to disease and socioeconomic factors may provide information on important aspects of PHV, but our study has demonstrated a need to supplement these outcomes to give a valid picture of the results of long-term PHV. The study suggest additional outcomes for such comprehensive evaluations of PHV services. To restrict evaluations of PHV to socioeconomic and objective health outcomes will therefore fail to measure success of interventions designed to meet the expectations and needs of older persons.

The case study demonstrated that PHV users are highly heterogeneous, their needs and preferences are even more so. If the visits are supposed to accomplish health related benefits of value for the users, interventions should be flexible, long-time, comprehensive and individually tailored to changing situations and needs. The visits' complex characteristics and the overlap between benefits from various health promotive and disease preventive initiatives – including the social and relational dynamics of the service provisions - give reasons to believe that the positive outcomes of the longitudinal PHV were a result of many components working together. Also Gustafsson (64) suggested that positive outcomes from PHVs could be explained by the sum of all components in multi-component approaches, resting on the idea that the sum of the parts in an intervention program is greater than the value of each separate part (64). Richards (268) has introduced the idea of 'the amalgamation of marginal gains' in relation to understanding of and evaluation of effects from complex interventions. He suggested that the sum of hardly measurable positive outcomes related to both the content and how an intervention is carried out in sum resulted in positive outcomes. Richards also proposed that nursing outcomes in general are defined by the aggregation of marginal gains (268).

These findings may contribute to understanding of why RCTs often have failed to show significant effects on a narrow specimen of outcomes of PHV. A main methodological issue in RCTs is to standardize the intervention and control the context and adherence to treatment, so that meta-analyses may detect "the secret ingredient" that produced the preferred outcome. In line with this, Beswick and colleagues questioned whether some individualization of treatment and management had occurred in the studies in their review, that could have hampered the possibilities to conclude (51). We claim that effective PHV services are messy, and that individualization of PHV interventions is not a problem; it is merely the way they produce positive outcomes for the users.

Even if I share an enthusiasm for PHV and other preventive and health promotive initiatives for older persons, I will add some critical reflections on these initiatives.

PHV services are linked to dominating values in the present western society, such as autonomy, mastery, independence and responsibility for own life and own health, reflected in governmental and international reports and aims (10, 41, 68, 198). Concurrent economical rationality within the health care sector with demands for cost-effectiveness and cost-savings result in normative demands to age in certain ways, reflected in terms such as "healthy

ageing” and “successful ageing”. These demands are guided by biomedical knowledge about the causal connections between a person’s health behaviour and disease, functional decline and mortality, and the possibility to prevent these problems even at an advanced age (23). The increased focus on effects of individual health behaviour on preventable conditions might diminish the focus on other health determinants. The importance of genetic dispositions, internal and external resources, environmental and socioeconomic conditions and even the stroke of luck on the incidence of many severe chronic or acute diseases is undisputable (121, 122). A common opinion about individual responsibility for own health and normative success-criteria for aging and independence may lead to a feeling of guilt and shame for those persons where this is not possible. As it is, less privileged groups have more health problems and the least resources to make changes in their lives. There is a risk, that if the service providers detects unhealthy behaviour while neglecting the influence of environmental and socioeconomic aspects, advice on life style changes will delegate the full responsibility for the person’s health to the individual, thus contributing to victim blaming and decreased health (121, 122). Health promotive policy and efforts therefore should aim to create supportive environments for health for all and buffer effects of socioeconomic differences (32, 121, 122, 269).

The aim of independent living might also be problematic. Even if it is a highly valued goal for the majority (6, 7), for some, independent living may be associated with loneliness and isolation and will therefore lead to reduced health (51). An increased focus on health promotion and disease prevention must therefore not lead to insufficient resources for the care and treatment for persons who no longer manage to live independently.

Another potentially problematic area may be the double aims of enhancing autonomy and empowerment, and on the other side to enhance adherence to the ideology of successful or healthy ageing. People in general perceive autonomy and empowerment as positive goals, based on appropriate knowledge to take informed decisions. This implies that the health visitors should respect the older person’s preferred way of living, even if this may not be along the lines of the “knowledge based” healthy ageing strategies. If not, health education or motivational interviewing may become more or less camouflaged tools to persuade people to do changes in their ways of living that is inconsistent with their own values, or “strengthen their empowerment to take the ‘right’ decisions” (263), which is manipulation.

6.3 Methodological considerations

I will in this section first address epistemological reasons for the methodological choices, then discuss methodological considerations related to the quality of the study. Finally, I sum up the strengths and limitations of the study.

6.3.1 Epistemological reasoning for choice of design and methods

We applied an exploratory case study design with a multiple methods approach in the study. The assumptions behind a multiple methods study need to be identified and stated (160), and this study is rooted in a pragmatist view. Pragmatism is pluralistic and bans the forced dichotomy between post positivism and constructivism, is oriented towards research questions relevant for practice, and towards applying the most appropriate methodologies to solve these research questions (153, 160, 270). The multiple methods approach therefore fit a pragmatist perspective well.

Pragmatism is linked to and coherent with nursing knowledge. My experience from more than twenty years of clinical nursing work is that subjective and objective perspectives and knowledge from different philosophical orientations and scientific paradigms are merged and intertwined to form nurses' professional competence. These diverse knowledge components are thus not merely accepted as valuable and necessary contributions to help solve distinct clinical problems and fulfil nursing work in a "professionally responsible and caring way" (146), but is integrated to form clinical nurses' way of viewing the world.

Research problems grounded in clinical nursing, such as in this study, are often complex because they mirror the complexity of real world professional challenges. A research problem relevant for clinical nurses may generate interesting research questions belonging to different knowledge spheres. The pragmatist view has the advantage of simultaneously being able to address different types of research questions within a study (153). The pragmatist view therefore fits the composite knowledge foundation in nursing. Going back to Kuhn's original use of the term, a paradigm may be understood as a set of shared generalizations, beliefs and values of a research field within a community of practitioners (160, 270). I strongly believe that concurrent underlying paradigms of researchers and clinical nurses will contribute to research results that will be understandable and relevant within the actual clinical community of practitioners (160).

6.3.2 The quality of the study

Our aim was to produce scientifically valid or trustworthy knowledge, that is knowledge collected and systematized according to principles that are known and acknowledged within the scientific society (271). In this multiple methods case study, we have chosen to take a pragmatic view, avoiding the ongoing debate regarding which concepts and criteria to apply to ensure quality in qualitative studies (272-274). We thus apply the concepts of validity and reliability as quality criteria in the study as a whole (153, 160). The content of the concepts validity and reliability differ in qualitative and quantitative studies, but their purpose are constantly to ensure the quality of the data, the results and the interpretation (152, 160). To demonstrate quality, we have described our systematic work to verify or make probable the results including reflections and reasons for choices through the research process in the thesis (152, 160, 272, 275).

Provided adequate methodological quality, combining different methodologies and interpretive approaches can strengthen the research findings, add to a more nuanced picture and extend the scope and depth of understanding of complex social phenomenon (151, 154-157, 161). The quality of the case study thus depend on the methodological quality of each of the sub-studies and of the combination of the studies. The study included the development of a questionnaire, and we will therefore discuss the validity related to the techniques used to combine the data from the qualitative and quantitative studies of this part of the study (160). The methodological considerations related to the final case-study triangulation are presented in the last section of this chapter.

The interview study of the users' long-term experiences

In sub study one, the purposeful sampling strategy resulted in a sample of study participants with unique, rich and diverse experiences related to long-term benefits from the PHV service (272), as well as shared patterns that “cut through the noise of variation” (154). Our analysis indicated data saturation (149) and we consequently considered the participants to constitute an appropriate sample with regard to the quite narrow focus of the study purpose. Despite this, we cannot warrant that more informants could have added nuances to the categories and therefore would have further strengthened the study. We excluded users with diagnosed dementia from the study, and thus missed the opportunity to collect experiences with the study from this subgroup of users and their informal caregivers.

The quality of the entire study rests on the quality of the original interview data, which makes the researchers' interview qualifications a vital issue (152, 154, 159, 276). I have theoretical and practical experience with conducting research interviews, and I have formal training in counselling. This has given me agreeable technical interview- and communication skills and practical interview capability. I have also extensive communication experience gained through my long clinical nursing career. I like talking to older people, and I usually obtain good rapport with people. In sum, I would say I possess adequate interviewer qualifications and relational competence to gain and maintain trust with participants (149, 152, 159, 276). Being a middle-aged female interviewer/researcher, I am aware that factors such as power, gender, age and class may have influenced what the informants choose to tell or not, and how they presented themselves as persons (156, 277). The informants share the responsibility for the construction of the conversation (152, 156, 159), and even if some informants were more gifted tellers than others, I experienced all the informants as cooperative and open, and contributed to the quality of the interviews.

Analyses of qualitative data may result in various interpretations. We strived to find the best possible or most likely interpretations of the data, but other alternative interpretations might have been possible (152). To enhance validity and reliability of the interpretations, the researchers involved in the study worked together in the reflexive and creative sorting processes of the codes, and finally agreed on the categorizations and comprehensive interpretations. The use of representative and interesting quotations in the reports supported and further validated the categorizations (278).

Combining the data: development of the questionnaire

We developed the questionnaire applied in study two based on findings from study one which specifically aimed at exploring experienced users' perceived benefits of the PHV service (162). We followed recommendations from the literature to only use strong findings from the initial qualitative step as a basis for quantitative follow up (160). We judged the findings related to perceived benefits in study one to be of good quality, and we deemed three of the main categories from study one to be appropriate as outcome items in the questionnaire.

The use of outcome items defined by experienced users within the same PHV service strengthened the internal validity of the evaluation. To further enhance validity and reliability of the data, all the background items included were well tested and used in other studies

among older respondents. The research questions, relevant literature and previous research informed the selection of background items. Several experts took part in the development and judged the ability of the questionnaire to produce valid information, and persons similar to the target group tested and found the questionnaire user-friendly and adequate. We thus judged the validity of the questionnaire to be sufficient for the purpose of study two, which was to evaluate the PHV service from the users' perspective. A full validation of the questionnaire (149, 188) was not within the frame of the study. Because PHV interventions can be very dissimilar (5, 48), the outcomes from the service in this study might not be identical with outcomes from other PHV services. Further validation procedures should therefore be performed before application of the questionnaire in other settings.

The quantitative evaluation

To avoid that the sample in the second, quantitative step was "contaminated" with persons involved in the development of the questionnaire (160), the informants in sub-study one or the older individuals involved in the development of the questionnaire were removed from the list of users before sampling. We intended to recruit a representative sample of PHV users. The sampling strategy secured cooperative respondents in various age groups with two to twelve years of follow-up from the PHV service, which we consider a strength of the study (149). The sample had relatively more male responders than the population of PHV users, but lack of other information about the non-responders hinder judgement of the sample's representativeness for the population.

Despite our efforts to increase participation in the study, described in article 2 (189) the total response rate was rather low, which threaten the reliability of the results and make it difficult to conclude and to generalize the results (149). A larger number of respondents, especially in the oldest group, would have strengthened the study. The number of users born in 1928 and earlier was substantially lower than younger users; we also expected the response rate to be lower among the oldest age groups related to a higher incidence of physical or mental limitations (10, 11, 15). Therefore, we invited a higher proportion of the oldest users and offered structured interviews to collect data within this group, which enables those with physical limitations to participate (149). Despite these actions, the number of respondents born in 1928 and earlier turned out to be low, which limits the reliability of the data and

restricted the possibility of producing statistically significant results in the regression analyses.

We found an overweight of positive responses to the outcome variables, and very few reported dissatisfaction. We assume that this might be because only those who perceived PHV to be relevant or valuable would adhere to the non-compulsory service. A general positive experience of the service might result in a tendency to overrate the positive elements in the evaluation. For several of the outcomes, the 'do not know'-response rates were high. This may relate to unclear/vague questions. We followed recommendations from the literature (160) and applied main categories when developing the outcomes. The use of subcategories instead of main categories might have been easier to respond to, because these are more descriptive and less abstracted. High do not know-responses may also relate to respondents with no experience with/ need for this outcome. An additional response alternative for 'not relevant' would have been helpful. The variation found in the responses to the different outcomes strengthens the trustworthiness of the survey, as this indicate a capability of the evaluation to capture individual variation related to diverse needs among the users.

To perform logistic regression analyses, the outcomes variables have to be dichotomous (177). Usually researchers merge positive responses as 'agree' and negative responses as 'disagree'. In our study, this would lead to very uneven category sizes, which could threaten the reliability of the logistic regression analyses (279). To solve this methodological challenge and simultaneously the potential 'positivity-problem' mentioned above, we decided to group the responses in a very restrictive manner, where only those who gave the highest score of the five alternatives were put in the 'yes' category, and all other alternatives were merged as 'no'. This gave acceptable balance in category sizes, but it might have resulted in an overly strict evaluation. The study thus had several methodological limitations, which restrict the possibility to draw conclusions.

The interviews with the PHV nurses

All the nurses in the sample volunteered to join the study, and all but one had been in the service from the start of the pilot period, or from when the service was extended to the entire municipality. The sample thus included almost the full body of experience from conducting the service, which was a strength of the study (154). All the informants and I were female nurses, about the same age, and even if I never had worked in PHV, my theoretical studies

had given me a certain knowledge about PHV services. We therefore shared parts of our professional identity and horizon. This made the conversation run easily, and I needed to remind myself to be aware my researcher role. The nurses were skilled communicators, and were motivated for the study and eager to talk about their work, which made them information-rich and good informants (149, 152). This resulted in a very rich data material related to service providers' long-term experiences with conducting PHV.

Knowing the interviews was part of an evaluation of the service and thus their work might increase the risk for getting a “glossy picture” of the service from the professionals. I experienced that the nurses were very dedicated to their work, and they gave detailed descriptions of their work and examples of how their work had supported benefits for the users. However, they also spontaneously talked about frustrations, challenges, failures and disappointments, and several had critical comments to aspects of the service. This balanced the success-stories and reflected a desire to contribute to improvement of the service.

The use of the Framework method helped to get an overview of the large amount of data. I used additional “helping tables” for the secondary, inductive categorization within each of the relevant main categories, and the refinement of the Framework matrix. Electronic tools for the sorting processes could have saved me some working hours, but the manual work increased my knowledge of the entire material. This helped to make sense of the material in the final stages of the comprehensive analysis, and in defining and interpreting the latent content.

The final step: the convergence of evidence

To optimize the understanding of the case under study and strengthen the quality of the case study, we followed recommendations from the literature and gathered rich and in depth information from several perspectives on the long-term PHV service (149, 151). We collected experiences with the PHV service from the users' and service providers'/nurses' perspectives, using both qualitative and quantitative data (150, 151, 154). Data from the sub-studies were analyzed separately and published in three articles (162, 189, 190). Then we triangulated data sources and methods, where we combined and compared the different parts of evidence to give a convergent answer to the main research problem (151, 153, 154). Triangulation is a way of validating the findings from various sub-studies and to overcome shortcomings related to various methods in the study (149, 154). The corroboration of evidence from users and nurses related to several of the benefits from the PHV service strengthen the credibility of

these findings, while some diversity between the perspectives added nuances and extended the picture of the benefits. The similarities and differences in the data from the sub-studies also contributed to extended understanding of the way benefits were created in this particular PHV service. The triangulation therefore increased the overall understanding of the service and the quality of the study (150, 151).

We experienced some challenges related to the convergence of evidence from the sub-studies. Both qualitative studies reported benefits from the service, but the logic and structure of the categories from the two sub-studies differed, and some main categories covered similar areas, but had different names. These differences might relate to the informants' different roles and perspectives, and to methodological diversity and the mainly inductive approach. In the inductive analysis of the users' experiences, I strived to keep close to the informants' self-understanding and phrasings from the interviews (152). The users' perceived benefits reflected a common, everyday language, and the naming of the categories related to personal, existential values. The nurses' used professional language and terms in their descriptions of what they had observed as benefits for the users, and tended to hold a more ability-orientated perspective reflected in the categories. The methodology was a combination of inductive and deductive content analysis (191), and my theoretical knowledge about health promotion probably contributed to the structure and names in the categorisation.

Yin (151) claims that an important argument or reason to apply case studies is the need to cover contextual conditions, believing they might be pertinent to your phenomenon of study. We therefore wanted to visualise a comprehensive picture of the case, and the convergence of the evidence resulted in a suggested model of the factors that influenced the creation of benefits from the service under study (Figure 6). The main sources for the model was the qualitative studies, in particular the nurses' perspectives, but also the quantitative study informed certain aspects. My analytic and creative capabilities were challenged when making sense of and presenting these converged findings. A good knowledge about the entire material helped to see patterns and systems, and discussions with my supervisors helped to make sketches and adjust the model. Thereafter, I invited the informants to give their opinions of the model, and four volunteered. After presenting the suggested model, the informants discussed and reflected upon it, gave some additional comments and finally approved the model. The final model is presented in the Findings sections (Figure 6).

6.3.3 Strengths and limitations of the study

We consider the explorative mixed methods case study approach a main strength of the study. We have strived to achieve good scientific quality of the sub studies and in the procedures related to combining and triangulating the studies. In sum, this has provided a deeper and more nuanced understanding of how this PHV service affected older persons' health and possibility for a good life in their own homes, compared to applying a single method or a single source of evidence. This design enhanced the user perspective of the study, which we consider an independent strength of the study. As far as we know, our study is the first case study exploring a population based, comprehensive, longitudinal PHV service. All sub-studies contributed to close gaps in the knowledge about PHVs. As far as we know, this is the first study to explore users' perceived long-time benefits from PHV, the first to evaluate users' opinions and experiences from PHV using outcomes defined by older PHV users within the same context, and the first to explore nurses' experiences with conducting long-term PHV.

Another main strength of the study was the choice of a well-integrated longitudinal PHV service as case, because this provided access to a large population of PHV users with a varied span of experience with the service. In particular, the possibility to interview informants with extensive, long time experience with PHV has provided unique in-depth information of long time benefits, and how these were achieved. The large span in experience among the user population also opened for interesting analyses in the quantitative evaluation not previously reported. The well-established service also allowed inclusion of PHV nurses with extensive experience with conducting long-term PHV. Another strength was the recruitment of the entire sample of nurses performing the service. Even if one nurse was excluded, the sample covered almost the complete experience of the services' history.

Despite our striving to achieve quality, the study has some limitations. The samples in the first qualitative study could be judged as 'minimum-samples', and additional informants would have strengthened the study. Another limitation was the use of a self-made questionnaire in study two, which was not fully tested in formal validation procedures. The tailoring of the questionnaire to the specific PHV service enhanced internal validity, but limited external validity. Rather low response rate created uncertainty related to the results, in particular to whether these could be generalized to the entire population of PHV receivers, and limited the possibility to draw conclusions from the results.

7 Conclusions and Implications

7.1 Conclusions

To our knowledge, this study was the first to explore nurses' and older users' experiences with PHV after many years of follow-up, and the first to identify older users' perceived benefits from PHV. As far as we know, it was also the first study to evaluate a PHV service from the users' perspective, applying outcomes defined by the users themselves, and explore if the perceived outcomes varied according to sociodemographic or health related factors.

A comprehensive PHV service with at least annual visits performed by experienced and well-educated nurses contributed to a broad variety of perceived benefits for the population of older PHV users, and the users valued the service highly. These benefits differed considerably from the outcome measures commonly used in RCT evaluations of PHV. Dedicated, competent nurses responded to individual needs and offered individually tailored support for personal goals of importance to the users during their aging processes. The outcomes added to older peoples' feeling of safety and helped them preserve their independence, their sense of worth and a good life. The service produced patient outcomes in line with the stated aims of the service, and probably contributed to sustain independent living, delay the need for regular home healthcare services, and ease the transitions to other healthcare services. Health promotive aspects of the PHV service dominated, and there was potential to extend the disease preventive aspects. We found no support for targeting the service to subgroups of the population.

The study demonstrated the necessity of exploring older persons' experiences and perceptions of PHV in order to develop the service so that it truly responds to individual needs and preferences. If PHV visits are supposed to accomplish health related benefits of value for the users, interventions should secure visitor continuity and specialised visitor competence, be flexible, long-time, comprehensive and individually tailored to changing situations and needs. The service must be an integrated part of a municipality's public health policy, and secure sufficient resources, interprofessional collaboration and adequate offer of easily accessible services and activities with sufficient capacity for older people. A consistent municipal health promotive policy and coherent healthcare services are necessary for maximizing the PHV's potential to improve older persons' health and independence.

7.2 Suggestions for further research

The case study has contributed to new knowledge about nurses' and users' experiences and opinions of PHV, but there is still very limited knowledge on this topic. Therefore, I recommend further qualitative studies exploring various stakeholders' experiences and short and long-time benefits from other PHV models, and comparing these to our study. I also suggest a qualitative exploration of the relationship between feeling of safety and age found in the first quantitative study.

We developed a questionnaire for evaluation of the PHV service in our study, applying outcomes defined by the users. Further validation and refinement of the questionnaire is necessary before application in evaluations of other PHV services. Outcomes might differ according to the approach of the PHV service, therefore we advise to perform an initial qualitative study to identify perceived outcomes from the service. Replication of the quantitative evaluation in other settings, preferably with a larger sample, could result in more information about significant relations between sociodemographic and health related variables and outcomes from PHV.

Longitudinal studies of PHV users' trajectories and the service providers' support for their problems and needs could give valuable information about the processes involved in production of long time outcomes from PHV. There is also a need for studies that describe and evaluate the ability of PHV to reduce socioeconomic differences in older persons' health.

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Appendices

Appendix 1. The municipality's invitation letter to the PHV service.

Appendix 2. Table 1. Reviews before study start: Main characteristics and results

Appendix 3. Table 3. Reviews after study start: Main characteristics and results

Appendix 4. Questionnaire applied in study 2

Appendix 5. Ethical approval for study 1 and 3

Appendix 6. Ethical approval for study 2

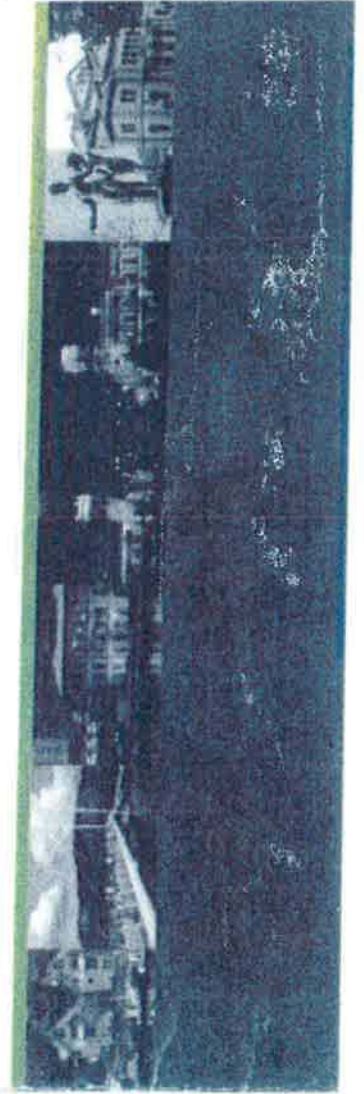
LOSJEPLASSEN HELSE- OG
OMSORGSDISTRIKT

Lungeveie 50
3015 Drammen



Forebyggende hjemmebesøk

Et tilbud til innbyggere
over 75 år
i Drammen kommune



Til:

I nær tilknytning til hjemmesykepleien ble det i 1999 etablert et Forebyggende helseteam for eldre i Omsorgstjenesten Danvik og Fjell.

Fra 2004 ble dette utvidet til å gjelde hele Drammen. Teamet består av 10 sykepleiere med lang erfaring.

Vi har som målsetting at innbyggere skal få tilbud om besøk fra en av våre sykepleiere i løpet av det året de fyller 75 år.

Under besøket får De anledning til å snakke om det som måtte oppta Dem i det daglige, for eksempel hva angår helse, trygghet, trivsel, bolig og tiden fremover.

Vi kan informere Dem om relevante helse tjenester i Drammen kommune. Om De ønsker det, vil vi i årene fremover ta jevnlig kontakt med Dem. Vi vil også være tilgjengelige hvis De har spørsmål underveis.

Selv om De i dag skulle føle Dem frisk og uavhengig, vil De gjennom vårt besøk kunne få opplysninger som kan komme til nytte i fremtiden. Det er derfor ikke slik som mange tror; at man må ha konkrete sykdommer eller plager for å ta kontakt med oss.

Jeg ønsker å besøke Dem i Deres hjem:

_____ dag, den _____ kl. _____

Dersom tidspunktet ikke passer, eller De ikke ønsker mitt besøk, ber jeg Dem ta kontakt med meg på telefon, mandag til fredag, dagtid. (Se telefonnummer på baksiden).

Med vennlig hilsen

Forebyggende helseteam for eldre, Drammen kommune

Besøket er frivillig, gratis og vi har taushetsplikt.

Table 1. Reviews before study start, characteristics and results

Reference Review	Number of trials	Target group	Intervention criteria	Outcomes (measured in number of trials)	Follow up time	Results	Methodological comments /conclusions
van Haastregt, Diederiks, van Rossum, de Witte, & Crebolder (2000)	15 trials: N = 8044	65 and over (9) 75 and over (6)	-Aim prevent or reduce problems & risks rel. to ageing -Use of multidimensional evaluation of problems and resources, resulting in sp recommendations -not exclusively for patients newly discharged from hospital	Mortality (13) Admission to institutions (7) Physical function (12) Psychosocial function (8) Falls (6)	5 mths (1) 1 year (2) 20 mths(1) 2 years (3) 3 years (7) 4 years (1)	Some positive and some negative results in the studies. Heterogeneity and lack of description of the interventions makes it difficult to conclude	No metaanalysis (heterogeneity) 3 st with single goal / fall prevention only. 2 st with visits= full nursing care. 1 st by peer volunteers
Systematic Review Narrative review ref nr 50	Canada:1 (1)	Risk of falling (14)	newly discharged from hospital				Concl: No clear evidence in favour of effectiveness of PHV
Elkan, Kendrick, Dewey, Hewitt, Robinson, Blair, Williams & Brummell (2001)	15 trials N=4956	65 and over(5) 70 and over(3) 75 and over(7)	-interventions including surveillance, support, health promotion and prevention of ill health. -not if only screening and referrals.	Mortality: general pop + risk pop (8+6) Admission to hospitals (6+3) Admission to institutional care Functional status (7+4) Health status (5+1)	One visit (1) 6 mths (1) 1 year (4) 20 mths(1) 2 years (2) 34 mths (1) 3 years (5)	Mortality: pos effect gen.pop: (OR 0.76) frail: (OR 0.72) Admission to nursing homes: pos effect g.pop: (OR 0.65) frail: (OR 0.55) Adm. to hospitals g.pop: (NS) frail: (insuff. data) Functional status g.pop: (NS) frail: (Ins data) Health status g.pop: (NS) frail: (ins data) meta-regression; no effect on any on mortality & institut.	Included RCTs and 2 non-randomized CTs. Only RCTs are included in metaanalyses. 1 study single visit, 1 study short term "home-rehab" 4 studies of visits after hospital stays
Effectiveness of home based support for older people: Systematic Review and meta-analysis (also meta-regression analysis) ref. nr 74	9 same as van Haastr. DK: 2 UK:6 NL:1 USA:5 Canada:1	General population (9) Recently discharged from hospitals (4) Frail (2)	-must involve a broad range of outcomes, not single goal. -only interv. with health visitors /nurses (not other health care personnel or volunteers)	Meta-anal. if outcome measured in three or more studies. Meta-regression: effect of age, population type and duration of intervent.			Concl: PHV can reduce mortality and admission to long term institutional care

Stuck, Egger, Hammer, Minder & Beck (2002)	18 trials N=13447 Same as: v.Haastr.12 Elkan 7 DK: 3 UK:7 NL:2 Swit:1 USA:3 Canada:1 Austr:1	65 and over(1) 70 and over(7) 75 and over (10) General population (6) GP lists (9) Insurance register (2) War veteran register (1) At risk of falls(2) Frail only (1) Living alone(1)	Whether or not they include systematic evaluation of medical, functional, psychosocial and environmental domains and a follow-up for the implementation of the intervention plan(MGA &FU) MGA &FU (6) Not MGA & FU (12) Frail /high mortality in control group (5) Medium frail (6) Not frail (5)	Mortality (18) Admission to nursing homes (13) Functional status (16)	Measure only number of follow up visits: <5 FU (10) 5-9 FU (4) >9 FU (4)	Admission to nursing homes pos eff. (RR=0.95) Functional status pos eff. (RR=0.94) Mortality pos eff. (RR=0.90) <u>Meta</u> regression: <u>N.H.adm.reduced.if</u> >5 FU OR = 0.90 >9 FU OR =0.66 Func. status: pos effect only if: MGA &FU (RR=0.76) Not frail (RR=0.78) <u>Mortality</u> : reduced only for youngest (>77,5) (RR =0.76)	2 studies using lay persons 4 studies single visits Only ordinary PHVs various populations Concl: PHVs appear to be effective for low risk pop., if include multidim. assessment and multiple follow up, more for younger old
Ploeg, Feighner, Hutchison, Patterson, Sigouin & Gaud (2005)	19 trials N=14911 same as Elkan 8 v. Haastr 7 Stuck 9 DK: 2 UK:6 NL:1 USA:5 Canada:4 Austr:1	54 and over(1) 65 and over(6) 70 and over(4) 75 and over(8) General pop / GP/clinic lists (14) Insurance register (2) Home care receivers (1) Unknown (1) Receive home care (1) Frail /at risk(4)	Various proactive, provider-initiated preventive primary care interventions (PHVs, telephone contact, office visits or combinations) that aims at identify risk and unrecognized problems, and to link those people to appropriate health and social care and support within the <u>primary care</u> <u>resources</u> .	Mortality (19) Living in the community (7) Admission to acute care hospital Admission to long term care	1 year (4) 14 mths(1) 20 mths(1) 2 years (6) 3 years (5) 4 years (1) 5 years (1)	Mortality (OR:0.83) Living in the community (OR: 1.23) Admission to acute care hospital (NS) Admission to long term care (NS) <u>Meta</u> regression: Mortality: sign. Eff. Only at 12 & 24 mths other intervention characteristic did not modify outcomes. younger pop. had higher poss. to stay in community: OR 1.68 vs 1.13	2 studies using lay persons 3 studies single visit includes different preventive primary care interventions, not only PHVs Concl: Primary care outreach interventions can reduce mortality and increase likelihood of continuing living in the community
Effectiveness of preventive care outreach interventions aimed at older people.							
Meta-analysis of RCTs							
ref. nr 63							

Markle-Reid, Browne, Weir, Gafni, Roberts & Henderson(2006) The effectiveness of home-based nursing health promotion for older people: A review of the literature.	12 trials same as: v Haastr 5 Elkan 6 Stuck 8 Ploeg 7 DK: 2 UK:2 NL:1 Switz: 1 Italy:1 USA:2 Canada:3	65 and over (3) 70 and over (3) 75 and over (5) not defined (1) General pop (7) Receive home care (1) Frail /at risk(4)	-only if carried out by nurse -home visits programmes only -multidim. assessments of health and functional status -identifications of needs and strengths, + recommendations and treatment -multiple follow up contacts -provider-initiated -general population, not therapeutic or rehab for specific diseases	Mortality: (11) Admission to hospitals (9) Health/ Functional status (8) Psychosocial facts (6) Use of other health and social services (9) Admission to nursing home (11) Caregiver outcomes (1) Costs (6)	6 mths (1) 1 year (2) 14 mths (1) 2 years (1) 3 years (6) 4 years (1)	Effectiveness: Mortality: 4 pos, health /Funct. stat: 4 Psychosocial facts: 1 caregiver outc: 1 pos Efficiency: Hospital stay: 5 pos (one onl. for younger) Nursing homes: 5 pos Use of other health and social services: 6 higher use Costs: 1 full cost-effectiveness analysis: pos 5 partial cost eval: 3 pos	no metaanalysis (heterogeneity) 1 st only telephone follow up 2 studies not reported FU 8 studies only prev. care 4 included health promotive focus Concl: a diversity of HV interventions by nurses can favourably affect health and functional status, mortality rates, hospital and nursing home admissions and costs.
Beswick, Rees, Dieppe, Ayis, Gooberman-Hill, Horwood & Ebrahim (2008). Complex interventions to improve physical function and maintain independent living in elderly people: A systematic review and meta-analysis.	89 trials N=97984	>65 general pop: 28 frail:24 care after hosp. discharge:21 fall prevent: 13 group education and counsel: 3	Community based complex or multifactorial interventions -at least 6 mths follow up	Mortality: (84) not living at home (60) Admission to nursing homes (54) Hospital admission (41) Falls (25) Physical Functioning (73) (meta-an 43)	6 mths 13) 1 year (36) 18 mths(9) 2 years(14) 3 years(14) 4 years (2) 54 mths(1)	Mortality: RR=1.0 Not living at home RR=0.95 (pos only for ger. ass of gen pop, and care after h.d.) Admission to nursing homes RR=0.87(pos only for ger. ass.and care after h.d) Hosp.adm risk: RR=0.94 (pos only for ger. ass of frail pop and care after h.d) Falls RR=0.90 (pos only for ger. ass of gen pop & fall prev) Physical Functioning SMD-0.08 0.09 (most for ger ass./fall prev	Different complex interventions, not PHV only Concl: C.I. can help older people to live safely and independently, and could be tailored to meet individual needs and preferences
ref. nr 2008							

Bouman, van Rossum Nelemans Kempen & Knipschild (2008). Effects of intensive home visiting programs for older people with poor health status: A systematic review. Narrative review.

6 trials
N=1503
NL: 3
Canada:1
Switz:1
Japan:1

Frail pop only
Published after 2000

-at least four visits pro year
-intervention 12 mths or more
->65 years with poor health
-carried out by health professionals (RN)
-not single/specific disease programs

Mortality (6)
Functional status (5)
Hospital Admiss (5)
Nursing home adm (4)

No favourable eff on any outcome in all but one of the studies (one pos on functional status short term).

Included high quality studies only.
3 studies from NL

Concl: Intensive HV- programs appear not to be beneficial for older people with poor health within the health care setting of Western countries

ref. nr 73

Huss, Stuck, Rubenstein, Egger & Clough-Gorr (2008). Multidimensional preventive home visit programs for community-dwelling older adults: A systematic review and meta-analysis of randomized controlled trials.

21 trials
N=14597
same as: v Haastr 9
Elkan 7
Stuck 14
DK: 2
Sw:1
Fi:1
UK:5
NL:4
Switz: 1
Austr:1
USA:4
Canada:1
Japan:1

published before 2007
65 and over(4)
70 and over (10)
75 and over(7)

-multidimensional PHV programs with follow up
->70 years mean age
-not post-hospital discharge programmes, home based care
management programs or single disease programmes
-reporting on the m. outcomes

Mortality (21)
Nursing home adm (16)
Functional status (16)
metaregression: controlled for: age, control group mortality rate (frailty) intervention dose, use of Clinical examination (CE), geriatrician involve ed or not (GER)

3 mths (1)
6 mths (1)
1 year (5)
18 mths(2)
2 years (4)
3 years (6)
39mths (1)
4 years (1)
number of follow up visits:
<5 FU ()
5-9 FU ()
>9 FU ()

Mortality OR=0.92 (youngest pop: OR=0.74)
Nursing home adm: OR=0.86 (NS)
Functional status OR=0.89 (only if clinical examin: OR=0.64)

Included different service providers: also volunteers

Concl: Multidimensional PHV have the potential to reduce disability burden among older adults when based on multidimensional assessment with clinical examination.

ref. nr 40

<p>Gustafsson, Edberg, Johansson & Dahlin-Ivanoff (2009).</p> <p>Multi-component health promotion and disease prevention for community-dwelling elderly persons: A systematic review.</p> <p>Narrative review</p> <p>ref. nr 64</p>	<p>14 trials N= 4192</p> <p>same as: v Haastr 1 Elkan 1 Markl R 4 Stuck 2 Bouman 4 Huss 4</p> <p>NL: 3 Switz: 1 USA: 5 Canada:5</p>	<p>Frail population (vulnerable, at risk of func. decl, having disabilities or chronic cond.) and receiving HPDP</p> <p>65 and over(2) 70 and over(7) 75 and over(4)</p>	<p>RCTs on frail community-dwelling >65</p> <p>only Multicomponent outpatient HPDP designed to improve or maintain health status and quality of life as well as delaying functional decline and dependence in ADL.</p>	<p>Any aspect of main ICF component:</p> <p>-17 aspects of body function and structure: (13) -32 aspects of activities and participation (14) -22 aspects of environmental factors (14) -22 aspects of personal factors (11)</p>	<p>3 mths (2) 6 mths (4) 1 year (4) 14 mths(1) 18 mths(2) 2 years (1) 3 years (1)</p>	<p>Body function and structure pos in 5/29% of aspects Activities and participation pos in 12/38% of aspects Environmental factors pos in 7/22% of asp.</p> <p>Personal factors pos in 9/36% of aspects.</p>	<p>No pooling due to heterogeneity 7 stud. low qual 3 st.lay visitors 3 st not home visits 10 st ger ass + recom. 3 st.training 3 st counselling Conc: HPDP are partially effective, more if persons are included in early stages of frailty. Advice interdisciplinary teams and multi-component, complex HPDP programmes</p>
<p>Liebel, Friedman, Watson & Powers. (2009). Review of nurse home visiting interventions for community-dwelling older persons with existing disability.</p> <p>Critical literature review</p> <p>ref. nr 71</p>	<p>10 trials</p> <p>Same as: v Haastr 2 Stuck 1 Markle-Reid 2 Huss 2 Gustafss 2</p> <p>NL: 1 Switz: 1 USA: 6 Canada:2</p>	<p>Already disabled persons only</p> <p>>65</p> <p>not provider-initiated interv.- patients were screened or recruited</p>	<p>Nurse in-home visiting interventions to persons already disabled.</p> <p>Multiple visits</p> <p>Multidimensional framework with targeted interdiscipl. strategy to delay /prevent disability. Ongoing home visits using components of community-based care and case management RCTs and quasi-experim. Studies</p>	<p>Disability evaluated by Donabedian's criteria: <u>structure component</u> _education: (Ed) _intervention dose: (ID) <u>Process variables</u> -nurse-patient relationship: (NPR) -Geriatric assessment and follow up: (GAFU) -Care and case management: (CCM) - Collaborative care environment (CCE) <u>Outcome variables</u> ADL/IADL (4) Part of comprehens. Geriatr. Assessm. (4) Disability or risk-scales (2)</p>	<p>6 mths 1 10 mths 1 1 year 3 2 years 1 3 years 2 no data: 2</p>	<p>Structure component Ed: more eff if nurses have geriatr. educ & experience ID: more pos if more frequent Process variables NPR: important, but often not measured. 2 st. with shared decision-making /active patient goal setting had pos. outc. GAFU: indecisive CCM: extensive HV care management-models pos eff on disability in 4 of 9 tr. CCE: interdiscipl. Coll pos eff in 4 studies</p>	<p>No pooling due to heterogeneity. older studies: 9 from 1999-2001, 1x2006 very strict incl. crit Concl: potential for improvement of disability. Recommends: Experienced nurses with geriatric educ., flexible frequent visits, comprehensive approach incl HP+DP, Tailored patient centred focus and interdisciplinary collaboration</p>

Fagerström, Wikblad, Nilsson (2009) An integrative research review of preventive home visits among older people - is an individual health resource perspective a vision or a reality? integrative research review ref. nr 47	18 trials Same as: v Haastr 5 Elkan 6 Stuck 6 Ploegh 6 Markle-R 6 Huss 7 DK: 1 NL: 4 UK: 2 Switz: 1 Australia: 3 USA: 2 Canada: 4 Japan: 1	65 and over (2) 70 and over (3) 75 and over (13)	PHVs to home-dwelling older people 16 RCTs 1 quant study 1 Qualitative study	activities and preventive actions during PHV (7 categ) positive and negative /unclear eff. of PHV Analyse if PHVs use a individual focus Preventive /sickness or health promotive/ resource perspective	Positive effects: mortality, physical and psychosocial functioning, life quality, subj health, admittance to care, positive exp. with visits, knowledge of health. Unclear effects: mortality, physical and psychosocial functioning, life quality, subj health, admittance to care Individualized focus of care in 13 / 18 st. Sickness focus 10/18	Concl: PHVs show mixed results on older peoples' health Advice more focus on mental health aspects, caring conversation and discussions on how to strengthen the persons inner health resources PHV should both assess risk and resources.
Daniels, Metzeltin, van Rossum, de Witte, van den Heuvel (2010) Interventions to prevent disability in frail community-dwelling older persons: an overview. Narrative review. ref. nr 72	48 trials Same as: Ploegh:1 Markle-R:1 Huss: 2 Fagerstr:2 DK: 1 NL: 4 Australia: 2 USA: 26 Canada: 7 Japan: 1 Finland: 3 Sweden: 1 Italy: 3	Frail community-dwelling persons Frailty identified by physical or multifactorial markers Australia: 2 USA: 26 Canada: 7 Japan: 1 Finland: 3 Sweden: 1 Italy: 3	RCTs only. Various disability preventive interventions Community based Comprehensive geriatric assessment (CGA) (26): - with recommendations and referrals to GP/ (4) - with treatment (15) Transmural CGA (7) Physical exercise programs (12) Nutrition (3) Technological (2) Other (6)	Disability (primary or secondary outcome). Outcome variables: Any measure of ADL or IADL - function 6mths: 4 8mths: 1 10mths:2 12mths: 8 15mths:1 16mths:1 18mths: 1 36mths:1	CGA Followed by referral to GP: No effect CGA Followed by treatment: Inconsistent findings. Positive eff. in 9 out of 15 studies	No weighting of effect related to study size. Heterogeneity in interventions within intervention subgroups. Concl.:CGA followed by treatment and care may prevent disability in frail older people. Advice multidimensional assessment, individualized treatment plan, case management, and long-term follow up.

Beswick, Gooberman-Hill, Smith, Wyde & Ebrahim (2010)
Maintaining independence in older people.
systematic review and meta-analysis
ref. nr 51

<p>total 110 N=109661 updated review, old: 89 trials + new 21 (2006-2009)</p>	<p>general pop:41 frail: 55 fall risk:14 new: general pop:4 frail: 9 fall risk:8</p>	<p>-older people >65 -RCTs on community based complex interventions -parallel group design -preventive strategy with multifactorial assessment and subsequent active management, referrals or recommendations -at least 6 mths follow up</p>	<p>Not living at home (72) Mortality (106) Admission to nursing homes (70) Admission to hospitals (51) Fall during follow-up (32) Physical function (54)</p>	<p>new: 6 mths (3) 1 year (10) 18 mths(5) 2 years (1) 3 years (1) 4 years (2) <u>Total:</u> 6 mths(16) 1 year (46) 18mths(14) 2 years(15) 3 years(15) 4 years (4) 54 mths(1)</p>	<p>Not living at home: RR=0.95 Mortality: RR=1.0 Admission to nursing homes: RR=0.87 Adm. to hospital: RR=0.94 Fall during FU: RR= 0.93 Physical function: mean difference - 0.07 (better function in intervention group)</p>	<p>Concl: Overall positive eff of complex interventions in helping older people to live at home, explained mainly by reduced nursing home admissions. Hospital adm. and falls were also reduced. More Pos effect in older studies.</p>
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Table 3. Reviews after study start. Characteristics and results.

Reference Review	Number of trials	Target group	Intervention criteria	Outcomes (measured in number of trials)	Follow up time /n visits	Results and Conclusions	Methodological comments
Tappenden, Campbell, Rawdin, Wong & Kalita (2012) The clinical effectiveness and cost-effectiveness of home-based, nurse-led health promotion programs UK only	11 trials	>75 at risk of adm. to nursing homes and hospitals	Structured home based nurse-led health promotion programs UK only	Adm. to hospital (1) Residential or nursing care (1), Mortality (8), Morbidity incl. Depression(1), Falls (4) Independence (4) health status (2) Qual of life (1) Caregiver strain (1) Economical evaluation (3) (various interv)	1 mth (1) 6 mths(1) 1 year (4) 2 year (3) 4 year (1) unclear (1) Number of visits: from five each day (!) to single visit 2/mths (1) 1/year (1) 2/year (1)	Mortality: Pos eff. On (OR:80) Falls: NS Independence: 2 pos 2 not eff. (no pooling due to heterogen.) Varying eff on other outcomes (no pooling, few trials) Concl: Home visits to older people can reduce mortality and appear to improve the health and well-being in older people Economy: inconclusive due to heterogeneity and various methods and measures.	Particular groups of older people with existing morbidities (4) Fall prevention (4). Home-based screening and health promotion to older populations (2). Home-based rehab (1) Some very intense interventions, which is not ordinary PHV
ref nr. 87		specific existing morbidity or rehab 5 general popul. 6					
Frost, Haw & Frank, (2012) Interventions in community settings that prevent or delay disablement in later life: an overview of the evidence. General review (review of systematic reviews)	62 reviews PHV 9 (incl. Elkan, Huss Stuck v. Hastregt, Markle-R Bouman Liebel & Beswick) Case managm. and MGA 6 Fall prev Exercise 15 Specific 15	50+ independent living older persons, general pop, frail /at risk & chronic disease	Complex interventions in community settings that aim to prevent or delay disablement in later life. Not if focused on specific diseases. (complex interv. are PHV + case managem)	impairment Physical function cognitive function social function disability quality of life ADL nursing home adm hospital adm Mortality Falls Cost/effectiveness	Various, but author comment on in general too short follow up time in RCTs (advice min 4-5 years)	Concl: Complex interventions: Inconsistent findings, most likely to be successful if: target Frail with low to medium risk, include MGA followed by a range of easily accessible interventions tailored to need and multiple follow up. Fall prevention: Exercise, especially balance exercises reduce falls but not risk of falling Exercise: high intensity increase strength and physical functioning more than low Cost: not possible to conclude	Skeptical to outcomes (hospital & nursing home admission) Critical to biomedical focus: call for lay perspective on successful ageing Small effects may not significantly influence disablement process or health care use
ref nr. 91							

<p>Skumsnes, Larun & Langeland (2013). Effekten av forebyggende hjemmebesøk til eldre. [Systematic review on the effect of preventive home visits to the elderly on self-rated health and quality of life]. Systematic Review</p>	<p>7 trials (RCT) 4,833 persons NL 3 Australia 1 Canada 2 Sweden 1</p>	<p>>67 home-dwelling persons Varying frailty / risk</p>	<p>PHVs Multi-dimensional, health prom. and disease prevent. focus Professional visitors.</p>	<p>Self-rated health(5) Quality of life (3)</p>	<p>3 mths 1 12 mths 2 15 mths 1 18 mths1 24 mths 1 36 mths 1</p> <p>one visits 2 1or2 pr year 1 2 pr year 1 3 pt year 1 4 pr year 1 5 pr year 2</p>	<p>Self-rated health: positive in 1/5 Quality of life 1/3 Small effects</p> <p>Concl: Two studies showed a small positive effect. Support for well-educated and especially trained professionals and interdisciplinary teams (based on two trials)</p>	<p>no pooling /meta-analysis because of different measures critical to short follow up advise more sensitive outcomes, qualitative studies and user perspective</p>
<p>ref nr. 90</p>							
<p>Mayo-Wilson, Grant, Burton, Parsons, Underhill & Montgomery (2014). Preventive home visits for mortality, morbidity, and institutionalization in older adults: A systematic review and meta-analysis.</p>	<p>64 trials 28642 persons USA (14) UK (14) Canada (11)</p>	<p>>65 community dwelling no dementia varying populations</p>	<p>PHV not after hospital Subgroups: (if in > 9 studies) n visits. visitor professi age Interv. components: Falls only MGA Fall + MGA no fall or MGA</p>	<p>Mortality (53) Institutionaliz. (26) Hospital adm (15) Falls (23) Physical funct (27) Cognitive funct (8) Quality of life (29) Psychiatric illness (15)</p>	<p>3 mths to 60 mths Average 4.9 visits pr study Single visits 11 Max 30</p>	<p>Mortality: small pos (RR 0.93) Institutionalization: No eff Hospital: small pos (RR 0.96) Falls: NS, heterogen. Physical function: small pos (SMD 0.10) Cognitive function: No eff Quality of life: no eff Psychiatr: small pos (SMD 0.10)</p> <p>Concl: PHV are not consistently associated with differences in mortality or independent living, and not possible to identify any subset of programs that are associated with consistent benefits. Due to poor reporting of intervention components and delivery, they cannot exclude the possibility that some programs may be effective</p>	<p>number, duration and focus of visits varied Various professionals insufficient descriptions of intervention, what was delivered and participant uptake Advice against more small RCTs on PHV</p>
<p>ref nr. 48</p>							

<p>Tourigny, Bédard, Laurin, Kröger, Durand, Bonin, . . . Martin (2015).</p> <p>Preventive Home Visits for Older People: A Systematic Review.</p> <p>Overview (review of systematic reviews)</p> <p>ref nr. 88</p>	<p>10 reviews 2000-2011 (incl. Elkan Stuck, v. Hastregt, Markle-R Bouman Liebel & Huss)</p> <p>>65 Community living Needing home care Identified as Frail</p>	<p>PHV approaches carried out by health professionals, or transition programs or coordination programs carried out in the home</p>	<p>All impact on patients, including mortality and function, on care – givers (health and wellbeing) and on professionals, and use of services and organization of care</p>	<p>Various durations and follow up in trials</p>	<p>Scarce and conflicting results on most outcomes. Mortality: some evidence for better outcomes in not too old Functional ability: some evidence support MGA with clinical examination and follow ups</p> <p>Concl: Need for more studies, and for a coherent definition of PHV programs and of their components in order to achieve a better understanding of their impact.</p>	<p>Overlapping original studies in the included reviews. Results were not retrieved from the original articles, but relied on the discussions in the reviews.</p>
<p>Renz, J.-C., & Meinck, M. (2017).</p> <p>[Effectiveness of preventive house visits for elderly people : Systematic assessment of current literature].</p> <p>ref. nr. 89</p>	<p>12 trials (+ 4 Reviews) 2004-2012 NL (2) AUS (1) CH (1) JP (2) D (1) CAN (3) S (1) DK (1)</p> <p>>60 Home-dwelling</p>	<p>Preventive and health promotive interventions</p>	<p>Mortality (10) Institutionaliz. (7) Hospital adm (5) Falls (2) Functional status (7) Cognitive funct (8) Quality of life (6)</p>	<p>6 mths 1 9 mths 1 12 mths 1 18 mths 2 24 mths 2 30 mths 1 36 mths 1 48 mths 1 54 mths 2 Nr of visits: from 3 pr mnth to 1 pr year. Average 4.6 visits pr study No single visits.</p>	<p>No pos. effect on mortality, functional status or nursing home-admissions, pos. effect on hospitalization in one study, on falls in two studies and on quality of life in one study, on functional status only for group with ADL-restrictions.</p> <p>Concl: No clear proof of the efficacy of PHV. No structure or process features having an efficacy regarding several outcomes could be derived either.</p>	<p>Intention-to-treat calculated in studies where possible. Good study quality, but substantial heterogeneity in the included studies. Advice to target older age groups, more frequent visits and I visitors with geriatric competence. Advice long-term studies including additional outcomes, and qualitative studies.</p>

Forskningsprosjekt om Helsefremmende og forebyggende hjemmebesøk til eldre / Forebyggende helseteam for eldre i Drammen kommune

Først vil vi gjerne ha svar på noen bakgrunnsspørsmål om deg.
Vennligst sett kryss ved det svaralternativet som passer best for deg på hvert spørsmål.

Kjønn: Kvinne Mann **Morsmål:** Norsk Annet _____

Fødselsår _____ **Hva er postnummeret der du bor:**

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Første besøk av forebyggende team (årstall) _____

Sivil status:

Gift Samboer Enslig Skilt Enke/enkemann, fra når? _____

Antall barn: _____

Utdannelse (sett kryss ved høyeste):

- Mindre enn 7 år
- Folkeskole
- Middelskole /realskole/ungdomsskole
- Framhaldsskole
- Gymnas/ videregående allmenfag
- Folkehøgskole
- Håndverksutdanning /fagbrev
- Handelsskole
- Universitet eller annen høyere utdanning
- Annet, hva? _____

Tidligere arbeid: _____

Hvor lenge har du bodd i Drammen?

Mindre enn ett år 1-5 år 6-20 år mer enn 20 år Hele livet

Type boform i dag:

- Enebolig
- Rekkehus
- Tomannsbolig
- Blokkleilighet /terrassehus: med heis uten heis
- Omsorgsbolig
- Annet, hva? _____

Trenger du hjelp fra noen for å klare å bo hjemme? ja nei
Hvis ja, hvem hjelper deg? _____

Bor du alene?

Ja Nei

Hvis nei, hvem bor du sammen med?

Mann/kone Samboer/venn Barn Søsken Andre _____

I alminnelighet, hvordan vil du si at din fysiske helse er?

svært god god middels dårlig svært dårlig

I alminnelighet, hvordan vil du si at din psykiske helse er?

svært god god middels dårlig svært dårlig

Sammenlignet med for ett år siden, hvordan bedømmer du din helsetilstand?

meget bedre litt bedre uendret litt dårligere mye dårligere.

Hvor mange slag medisiner på resept bruker du: 0-4 5-9 10 el fler

Hvor mange mennesker står deg så nær at du kan regne med dem hvis du har store personlige problemer?

Ingen 1 til 2 3 til 5 6 eller mer

Hvor stor interesse viser folk for det du gjør?

Ingen deltakelse og interesse

Lite deltakelse og interesse

Usikker

Noe deltakelse og interesse

Stor deltakelse og interesse

Hvor lett er det å få praktisk hjelp fra naboer om du skulle trenge det?

Meget vanskelig Vanskelig Mulig Lett Meget lett

Er du tilfreds med livet? ja nei vet ikke

Føler du at noen trenger deg? ja nei vet ikke

Har du planer for fremtiden? ja nei vet ikke

Opplever du livsglede? ja nei vet ikke

Er du deprimert /trist? aldri /sjelden noen ganger ofte /alltid

Lider du av ensomhet? aldri /sjelden noen ganger ofte /alltid

Så noen spørsmål om dine erfaringer med og oppfatninger av hvordan tjenesten Helsefremmende og forebyggende hjemmebesøk er organisert:

Hvordan foregår din kontakt med forebyggende helseteam for eldre?

- Får besøk regelmessig
- Hatt ett besøk, deretter telefonkontakt
- Har både besøk og telefonkontakt

Forhåndsinformasjonen som ble sendt ut før første besøk var dekkende enig uenig husker ikke

Hensikten med besøkene kom klart fram i forhåndsinformasjonen enig uenig husker ikke

Det er viktig å vite på forhånd hva førstegangsbesøket skal handle om enig uenig vet ikke

Brev med forslag til tidspunkt er en grei måte å avtale første besøk enig uenig vet ikke

Førstegangsbesøket varte for lenge passe for kort

Årlig kontakt med forebyggende team er: for ofte passe for sjelden

Hvis alt er bra kan oppfølging etter første besøk skje via telefonsamtale enig uenig vet ikke

Jeg ønsker besøk uansett, ikke telefonoppfølging enig uenig vet ikke

Oppfølgingsbesøkene varer for lenge passe for kort

Oppfølgingen bør tilpasses hver enkelt etter behov enig uenig vet ikke

Det er viktig at alle får like ofte besøk enig uenig vet ikke

Det er viktig å bli fulgt opp av den samme personen i forebyggende team over tid enig uenig vet ikke

Det er viktig å beholde samme kontaktperson dersom man flytter til annen bydel enig uenig vet ikke

Det spiller liten rolle hvem som kommer fra forebyggende helseteam for eldre enig uenig vet ikke

Gi gjerne kommentarer _____

De neste spørsmålene gjelder hva slags hjelp og nytte du evt har hatt av besøkene fra Forebyggende helseteam for eldre.

Besøkene og hjelpen fra Forebyggende helseteam for eldre (FT) har bidratt til:

Ikke hatt behov for hjelp ang dette	Bidrar ikke i det hele tatt	Bidrar i noen grad	Bidrar i stor grad
-------------------------------------	-----------------------------	--------------------	--------------------

FT bidrar til at jeg føler meg trygg

FT bidrar til at jeg klarer det daglige hjemme

FT bidrar til at boligen er tilpasset mine behov

FT bidrar til at boligen er trygg å bo i

FT bidrar til redusert risiko for å falle

FT bidrar til at jeg har godt funksjonsnivå

FT bidrar til at jeg opprettholder helsa

FT bidrar til at jeg har kunnskap om mine sykdommer og medisiner

FT bidrar til at jeg kan fortsette med aktiviteter som gir glede og mening

FT bidrar til at jeg kan opprettholde sosial kontakt med familie og venner

FT bidrar til at jeg har fått mer sosial omgang

FT bidrar til at jeg føler meg mindre ensom

FT bidrar til at jeg føler meg verdifull

FT bidrar til at jeg fortsatt kan være den personen jeg ønsker å være

FT bidrar med støtte i vanskelige livssituasjoner

FT bidrar med støtte i rollen som pårørende

FT bidrar til at jeg holder motet oppe

FT bidrar til at jeg kan bestemme selv i det daglige

Andre ting? Skriv gjerne kommentarer: _____

Besøkene fra forebyggende helseteam for eldre medfører:

Ikke i det hele tatt	I liten grad	I noen grad	I stor grad	Vet ikke
----------------------	--------------	-------------	-------------	----------

at jeg føler jeg blir behandlet som eldre enn jeg er

at jeg føler meg hjelpeløs og avhengig

at jeg føler meg presset til å forandre på ting i livet mitt

at jeg føler at jeg må utlevere meg

at jeg blir overvåket av kommunen

Skriv gjerne kommentarer: _____

Hvor enig er du i utsagnene under:

Helt enig	Litt enig	Litt uenig	Helt uenig	Vet ikke
-----------	-----------	------------	------------	----------

Det er viktig at en fra forebyggende team ser til meg jevnlig

Det er viktig at jeg har en fast kontaktperson i kommunens helsetjeneste

Det er viktig at jeg vet hvem i kommunen jeg kan ringe til hvis jeg trenger informasjon / hjelp

Det er viktig å ha en fagperson i FT å snakke med om helsa

Det er viktig å ha en fagperson i FT å snakke med om utfordringer knyttet til det å bli eldre

Samtalene med min kontaktperson i FT handler om det som er viktig for meg

Jeg får hjelp fra FT med det som er viktig for meg

Skriv gjerne kommentarer: _____

Så noen spørsmål om de som foretar besøkene.

Vennligst sett ett kryss for hvert spørsmål

Opplever du at kontaktpersonen din i forebyggende helseteam:

Ikke i det hele tatt	I liten grad	I noen grad	I stor grad	Vet ikke
----------------------	--------------	-------------	-------------	----------

møter deg med høflighet og respekt

har omsorg for deg som person

er interessert i din beskrivelse av egen situasjon

lytter til deg og det du forteller

trer råd ned over hodet ditt

er en god samtalepartner for deg

er en du har tillit til

støtter din evne til å klare deg selv i hverdagen

har god kunnskap om å fremme helse og forebygge sykdom

har god kunnskap om eldres rettigheter i kommunen

har god kunnskap om tilbud for eldre i lokalmiljøet

informerer og forklarer slik at du forstår

er fordomsfull og dømmende

hjelper med det du trenger (evt formidler hjelp)

er tilgjengelig hvis jeg ringer

Gi gjerne kommentarer ang de som utfører besøkene:

Til slutt: Denne studien inngår i en evaluering av tjenestetilbudet Helsefremmende og forebyggende hjemmebesøk i Drammen kommune, som Forebyggende helseteam for eldre gjennomfører.

Alt i alt, hvor fornøyd er du med tjenesten Helsefremmende og forebyggende hjemmebesøk?

Svært misfornøyd	Litt misfornøyd	Ganske fornøyd	Svært godt fornøyd	Vet ikke

Alt i alt, mener du at Forebyggende Helseteam bidrar til å støtte din evne til å bo hjemme?

Ikke i det hele tatt	I liten grad	I noen grad	I stor grad	Vet ikke

Alt i alt, mener du at Forebyggende Helseteam bidrar til at du kan ha et godt liv i eget hjem?

Ikke i det hele tatt	I liten grad	I noen grad	I stor grad	Vet ikke

Alt i alt, hvor viktig mener du tjenestetilbudet Helsefremmende og forebyggende hjemmebesøk er for eldre innbyggere i Drammen?

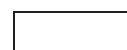
Ikke viktig i det hele tatt	Nokså lite viktig	Ganske viktig	Svært viktig	Vet ikke

Hvis du opplever at Helsefremmende og forebyggende hjemmebesøk er av betydning for deg: Hva er det viktigste de bidrar med for deg?

Forslag til forbedringer av tjenesten

Hva kunne du ønske var annerledes? Har du forslag til andre måter å gi helsefremmende tjenester til eldre på?

Tusen takk for at du bidro med dine erfaringer og synspunkter





UNIVERSITETET I OSLO

DET MEDISINSKE FAKULTET

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Dato: 10.03.11
Deres ref.:
Vår ref.: 2011/122-1

E-post: post@helseforskning.etikkom.no
Nettadresse: <http://helseforskning.etikkom.no>

2011/122b kan helsefremmende og forebyggende hjemmebesøk støtte den eldre helseressurser og mulighet for et godt liv i eget hjem?

Prosjektleder: Lisbeth Fagstrøm
Forskningsansvarlig: Høgskolen i Buskerud, avdeling for helsefag, ved øverste ledelse

Vi viser til søknad om forhåndsgodkjenning av ovennevnte forskningsprosjekt. Søknaden ble behandlet av Regional komité for medisinsk og helsefaglig forskningsetikk, REK sør-øst B, i møte 09.02.2011.

Saksfremstilling

Formålet med prosjektet er å fremskaffe ny kunnskap om hvilke prosesser som er involvert og hva som påvirker effekt av helsefremmende og forebyggende hjemmebesøk hos eldre (HFBH). I denne studien anvendes et utforskende casestudie-design. Studiens problemstilling er om helsefremmende og forebyggende hjemmebesøk er et tjenestetilbud som fremmer helsen og støtter den eldre kapasitet til å bo hjemme. Studien er første del av flere delstudier som skal inngå en doktorgrad i sykepleie/helsefag.

Studien er samtykkebasert for alle deltagerne. Det skal utvikles spørreskjemaer og bruk av ulike typer intervjuer med lydbåndopptak. Det anses nødvendig med tre utvalg: 1) hjemmeboende eldre som har mottatt tjenestetilbudet, 250 personer, 2) fagpersoner som utøver tjenesten, 10 personer, og 3) ledere og andre fagpersoner i kommunehelsetjenesten, ca 20 personer.

Det ønskes bruk av bredt samtykke som kan dekke nye studier innenfor samme forskningsområde. Opplysningene skal behandles aidentifisert med koblingsnøkkel adskilt fra forskningsfil.

Forskningsetisk vurdering

Komiteen finner at studien er samfunnsnyttig, da kunnskap om effekt av helsefremmende og forebyggende tiltak rettet mot eldre, kan få betydning på bakgrunn av forventede demografiske endringer. Slik studien er fremstilt i søknaden er den først delt inn i en

kvalitativ undersøkelse med bruk av individuelle forskningsintervjuer. Resultatene av analysen av de individuelle intervjuene som skal gjennomføres med brukerne, skal danne grunnlag for utvikling av et spørreskjema for å innhente erfaringer og synspunkter på HFHB fra gruppen eldre generelt. Spørreskjemaene er således ikke vedlagt prosjektsøknaden. Komiteen kan derfor ikke godkjenne denne delen av studien før spørreskjemaene foreligger.

Informasjonsskriv og samtykkeerklæring

Hvis det skal gjenbrukes data til senere behandling i prosjektet, så må det fremgå av informasjonsskrivet, eller det må innhentes nytt samtykke.

I de to informasjonsskrivene som er vedlagt må det endres til at det er professor Lisbeth Fagerstrøm som er prosjektleder og at doktorand Tøien er prosjektmedarbeider.

Komiteen gjør oppmerksom på at dersom det ønskes å gjenbruke opplysningene i nye studier innenfor det samme forskningsområde, er hovedregelen at det må innhentes et nytt samtykke fra deltakerne og forelegges REK for forhåndgodkjenning. For øvrig skal alle vesentlige endringer innenfor samme forskningsprosjekt som er blitt forhåndgodkjent, forelegges REK til behandling. Vi viser her til helseforskningsloven § 11.

Vedtak

Komiteen godkjenner den kvalitative delen av studien som omfatter de individuelle intervjuene. For den delen av prosjektet som omfatter spørreundersøkelsen må det først sendes inn endringsmelding til REK før evt. godkjenning.

Godkjenningen er gitt under forutsetning av at prosjektet gjennomføres slik det er beskrevet i søknaden for den kvalitative intervjudelen, og etter de bestemmelser som følger av helseforskningsloven med forskrifter.

Dersom det skal gjøres endringer i prosjektet i forhold til de opplysninger som er gitt i søknaden, må prosjektleder sende endringsmelding til REK.

Forskningsprosjektets data skal oppbevares forsvarlig, se personopplysningsforskriften kapittel 2, og Helsedirektoratets veileder for «Personvern og informasjonssikkerhet i forskningsprosjekter innenfor helse- og omsorgssektoren». Personidentifiserbare data slettes straks det ikke lenger er behov for dem og senest ved prosjektets avslutning.

Godkjenningen gjelder til 30.09.2014. Prosjektet skal sende sluttmelding på eget skjema, se helseforskningsloven § 12, senest et halvt år etter prosjektslutt.

Komiteens vedtak kan påklages til Den nasjonale forskningsetiske komité for medisin og helsefag, jfr. Helseforskningsloven § 10, 3 ledd og forvaltningsloven § 28. En eventuell klage sendes til REK sør-øst B. Klagefristen er 3 uker fra mottak av dette brevet, jfr. Forvaltningsloven § 29.

Vi ber om at alle henvendelser sendes inn via vår saksportal:
<http://helseforskning.etikkom.no> eller på e-post til post@helseforskning.etikkom.no.

Vennligst oppgi vårt referansenummer i korrespondansen.

Med vennlig hilsen,

Stein Opjordsmoen Ilner (sign.)
Professor dr. med
Komitéleder


Katrine Ore
Komitésekretær/Rådgiver

Kopi:

- Doktorgradsstipendiat Mette Tøien, Høgskolen i Buskerud, avdeling for helsefag, mette.toien@hibu.no
- Dekan Heidi Kapstad, Høgskolen i Buskerud, avdeling for helsefag, heidi.kapstad@hibu.no

Region: REK sør-øst	Saksbehandler: Hege Holde Andersson	Telefon: 22845514	Vår dato: 28.02.2013	Vår referanse: 2011/122 REK sør-øst B
			Deres dato: 14.02.2013	Deres referanse:

Vår referanse må oppgis ved alle henvendelser

Mette Tøien
Høgskolen i Buskerud

2011/122b kan helsefremmende og forebyggende hjemmebesøk støtte den eldre helseressurser og mulighet for et godt liv i eget hjem?

Forskningsansvarlig: Høgskolen i Buskerud
Prosjektleder: Mette Tøien

Vi viser til søknad om prosjektendring datert 14.02.2013 for ovennevnte forskningsprosjekt. Søknaden er behandlet av leder for REK sør-øst på fullmakt, med hjemmel i helseforskningsloven § 11.

De omsøkte endringene er beskrevet i skjema for prosjektendringer og dreier seg om:

- forlengelse av prosjektet til 30.09.2019 for kvantitativ delstudie.
- søknad for godkjenning av nyutviklet spørreskjema til bruk i kvantitativ delstudie.
- ny/endret forespørsel om deltakelse og samtykkeerklæring.

Studiens kvalitative del ble godkjent i 2011, den kvantitative delen kunne da ikke vurderes før spørreskjemaet forelå.

Komiteens vurdering

Komiteen har ingen forskningsetiske innvendinger til prosjektet slik det nå foreligger.

Vedtak

Komiteen har vurdert endringsmeldingen og godkjenner prosjektet slik det nå foreligger med hjemmel i helseforskningsloven § 11.

Godkjenningen er gitt under forutsetning av at prosjektet gjennomføres slik det er beskrevet i endringsmeldingen.

Dersom det skal gjøres vesentlige endringer i prosjektet i forhold til de opplysninger som er gitt i søknaden, må prosjektleder sende endringsmelding til REK.

Forskningsprosjektets data skal oppbevares forsvarlig, se personopplysningsforskriften kapittel 2, og Helseinspektatets veileder for «*Personvern og informasjonssikkerhet i forskningsprosjekter innenfor helse- og omsorgssektoren*».

Prosjektet skal sende sluttmelding på eget skjema, senest et halvt år etter prosjektslutt, jf. helseforskningsloven § 12.

Komiteens vedtak kan påklages til Den nasjonale forskningsetiske komité for medisin og helsefag, jf. Forvaltningslovens § 28 flg. Eventuell klage sendes til REK Sør-øst. Klagefristen er tre uker fra mottak av dette brevet.

Vi ber om at alle henvendelser sendes inn med korrekt skjema via vår saksportal: <http://helseforskning.etikkom.no>. Dersom det ikke finnes passende skjema kan henvendelsen rettes på e-post til: post@helseforskning.etikkom.no.

Med vennlig hilsen

Stein Opjordsmoen Ilnér
professor dr. med.
leder REK sør-øst B

Hege Holde Andersson
Komitésekretær

Kopi til: heidi.kapstad@hibu.no; postmottak@hibu.no

PAPER I

PAPER II

PAPER III

