

Boligløsninger for eldre

Notat fra Kunnskapscenteret
Systematisk litteratursøk
med sortering
Januar 2013

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Nasjonalt kunnskapssenter for helsetjenesten fremskaffer og formidler kunnskap om effekt av metoder, virkemidler og tiltak og om kvalitet innen alle deler av helsetjenesten. Målet er å bidra til gode beslutninger slik at brukerne får best mulig helsetjenester. Kunnskapssenteret er formelt et forvaltningsorgan under Helse- direktoratet, men har ingen myndighetsfunksjoner og kan ikke instrueres i faglige spørsmål.

Nasjonalt kunnskapssenter for helsetjenesten
Oslo, januar 2013

Hovedfunn

Nasjonalt kunnskapssenter for helsetjenesten fikk i oppdrag av Husbanken å utføre et systematisk litteratursøk med påfølgende sortering av mulig relevante publikasjoner. Oppdraget var å identifisere studier som undersøker helseeffekten av og erfaringer med boligtiltak blant friske eldre mennesker over 60 år.

Metode

Vi utarbeidet en søkestrategi for et systematisk litteratursøk. Det ble søkt i medisinske/sosialfaglige databaser etter studier. Søket ble utført i desember 2012. Parvis gikk forfatterne, uavhengig av hverandre, gjennom identifiserte referanser og vurderte relevans i forhold til inklusjonskriteriene. Vi sorterte deretter referansene i henhold til type tiltak og studiedesign.

Resultater

- Vi identifiserte totalt 8652 referanser. Av disse var 66 mulig relevante i henhold til inklusjonskriteriene
- De mulig relevante referansene ble sortert i 4 kategorier ut fra boligløsning/intervensjon. I tillegg ble de sortert etter type studiedesign. Det var ikke hensiktsmessig å sortere referansene etter geografi da dette var oppgitt i kun et fåtall av sammendragene.
- Relativt få av de inkluderte studiene har kontrollerte design som kan si noe sikkert om effekt av tiltakene. Men av de kontrollerte studiene og oversiktssartiklene som ble inkludert i denne rapporten, har de fleste av disse undersøkt effekt av boligtilpasninger og tekniske løsninger i hjemmet. Dette funnet kan være et grunnlag for en videreføring av prosjektet i form av en systematisk oversikt over denne type boligtiltak. Et slikt arbeid fordrer imidlertid ytterligere spissing av problemstillingen med tanke på hva som er relevante populasjoner, tiltak og utfall.

I dette notatet har vi listet opp mulig relevante referanser, men vi har hverken lest dem i fulltekst, vurdert den metodiske kvaliteten eller sammenstilt funn og konklusjoner.

Tittel:

Boligløsninger for eldre – systematisk litteratursøk

Publikasjonstype:

Systematisk litteratursøk med sortering

Systematisk litteratursøk med sortering er resultatet av å

- søke etter relevant litteratur ifølge en søkestrategi og
- eventuelt sortere denne litteraturen i grupper presentert med referanser og vanligvis sammendrag

Svarer ikke på alt:

- Ingen kritisk vurdering av studienes kvalitet
- Ingen analyse eller sammenfatning av studiene
- Ingen anbefalinger

Hvem står bak denne publikasjonen?

Kunnskapssenteret har gjennomført oppdraget etter forespørsel fra Husbanken.

Når ble litteratursøket utført?

Søk etter studier ble avsluttet i desember 2012.

Key messages

The Norwegian State Housing Bank (Husbanken) commissioned a report from The Social Research Unit at the Norwegian Knowledge Centre for the Health Services to develop and conduct a systematic search, and sort possibly relevant references. The goal was to identify studies investigating the health effect of, and experiences with, housing interventions for healthy elderly > 60 years.

Methods

We conducted a systematic search of the literature, including medical and social science databases, for empirical studies. The search was conducted in December 2012. The authors independently assessed the identified references for inclusion/exclusion and discussed their assessments in pairs. We then sorted the references according to interventions and study design.

Results

- We identified 8652 references in total. Of these, we found 66 to be relevant according to the inclusion criteria.
- The possibly relevant references were sorted into 4 different categories according to type of housing intervention for the elderly. The references were also sorted according to study design. Sorting the references by geography was not considered practical, as this was not described in most of the abstracts.
- Relatively few of the included studies applied a controlled design. However, most of the controlled studies and reviews that were included in this report were investigating the effect of home modifications and assistive technology. It would be potentially valuable to continue the project as a full systematic review on such interventions. However, this requires that we specify in more detail the relevant populations, interventions and outcomes.

We have sorted and listed all possibly relevant references, but we have neither read the papers in fulltext, critically appraised their methodological quality, nor synthesised their conclusions.

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Forord

Husbanken har bedt om et systematisk litteratursøk med sortering for å identifisere studier som undersøker helseeffekten av og erfaringer med ulike boligløsninger for friske eldre over 60 år.

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Bakgrunn

Med økt levealder og synkende pensjonsalder medfører dette at vi i årene framover vil få en stor gruppe friske og aktive pensjonister. Fram til 2030 vil gruppen eldre over 60 år øke og utgjøre 26% av den totale befolkningen (1). Den norske boligmassen er imidlertid i liten grad tilrettelagt for at eldre kan bli boende hjemme utover i alderdommen fordi mange boliger mangler heis, har trapper opp til bad og toalett, har dørkarmer som er for smale til rullestol og så videre.

Den økende gruppen friske og aktive eldre behøver ikke sykehjemsplass, men en bolig de kan bo lenge i (2). Slike boliger bør i følge Norsk Boligbyggelag bygges slik at de er enkle å komme inn i og enkle å bevege seg i, samt ha servicetilbud og mulighet for et aktivt og sosialt liv nært tilgjengelig. Husbanken har bestilt et litteratursøk med sortering for å få en oversikt over studier som har undersøkt helseeffekt av og erfaringer med ulike boligløsninger for friske eldre over 60 år.

Definisjoner

Boligløsninger som intervensjon omfatter i dette prosjektet alle typer tiltak som kan bidra til at eldre kan bli boende i eget hjem lengst mulig. Dette innebærer alt fra tekniske og arkitektoniske/designmessige tilpasninger i hjemmet til seniorboliger og såkalte "retirement villages", det vil si en samling av boenheter med tilgang til service- og fritidstilbud. Også miljøet/omgivelsene rundt boliger for eldre er inkludert som intervensjonsfaktor i dette prosjektet. Fordi oppdraget var å se på boligtiltak for friske eldre, er boligløsninger som sykehjem, sykehus og omsorgsboliger som har til hensikt å gi behandling til pasienter/pleietrengende ekskludert i dette prosjektet.

Helse som utfall omfatter i dette prosjektet både fysisk og psykisk helse, samt psykososiale helseforhold som livskvalitet og sosial deltakelse. Fordi fallulykker er utbredt blant eldre, har vi også inkludert dette som utfall i litteraturgjennomgangen.

Styrker og svakheter ved litteratursøk med sortering

Ved systematiske litteratursøk med sortering går man gjennom søkeresultatet for å sortere ut ikke-relevante artikler. Dette gjøres basert på tittel og eventuelt sammen- drag. Artikkene innhentes ikke i fulltekst. Det gjør at vi kan ha inkludert titler som kan vise seg ikke å være relevante ved gjennomlesning av fulltekst. Vi benytter kun databaser for identifisering av litteratur og kan derfor ha gått glipp av potensielt re- levante studier. Andre måter å identifisere studier på, som søk i referanselister og kontakt med eksperter på fagfeltet er ikke utført i dette oppdraget. I et litteratursøk med sortering gjennomføres ingen kvalitetsvurdering av artikkene.

Ved en full forskningsoppsummering ville vi ha innhentet artikkene i fulltekst for endelig vurdering opp mot inklusjonskriteriene. Inkluderte studier ville i tillegg blitt kvalitetsvurdert i henhold til våre sjekklister, og resultatene ville blitt sammenstilt og diskutert.

En styrke ved systematiske litteratursøk med sortering er imidlertid at det gir et bil- de av forskningslitteraturen som kan peke på områder med manglende kunnskap (få empiriske studier) eller områder hvor tilfanget av forskning er rikelig, og hvor det er behov for en systematisk oversikt.

Problemstilling

Målet med dette prosjektet er å gjennomføre et systematisk litteratursøk med sorte- ring for å identifisere studier som undersøker helseeffekten av og erfaringer med boligtiltak for friske eldre over 60 år. Dette litteratursøket kan ligge til grunn for en senere systematisk oversikt over samme/tilgrensende tema.

Metode

Litteratursøk

Vi søkte systematisk etter studier i følgende databaser:

- Bibsys
- Campbell Library
- Cinahl
- Cochrane Library (alle databaser)
- DARE
- ERIC
- ISI Science/Social Science Citation Index
- PsycINFO
- Medline
- Google scholar
- Open Sigle – System for Information on Grey Literature in Europe
- SSRN – Social Science Research Network e-library
- Social Services Abstracts
- Social Care online
- Sociological abstracts
- HUD User Database
- Google

Prosjektleder planla en søkestrategi i samarbeid med forskningsbibliotekar. Forskningsbibliotekaren utførte samtlige søk. Den fullstendige søkestrategien finnes i vedlegg til denne rapporten. Søk etter litteratur ble avsluttet i desember 2012.

Begrunnelse for valg av søkestrategi

Vi la bestillingen til grunn ved utarbeiding av litteratursøket og søkte etter oversikter som oppfylte våre inklusjonskriterier for populasjon og intervensjon. Vi har søkt i elektroniske kilder, samt etter grå litteratur i Google. Søket er gjort for hele tidsperioden databasene dekker bakover i tid.

Inklusjonskriterier

Populasjon:	Friske eldre over 60 år.
Tiltak:	Alle boligtiltak som bidrar til at eldre kan bli boende i eget hjem lengst mulig.
Sammenlikning:	Ingen tiltak.
Utfall:	Fysisk og psykisk helse, psykososiale utfall som livskvalitet, sosial deltakelse, botid før flytting til institusjon.
Studiedesign	Ingen begrensning på studiedesign.
Språk:	Ikke presisert

Artikkelutvelging

Forskerne gikk parvis gjennom alle titler og sammendrag for å vurdere relevans i henhold til inklusjonskriteriene. Vurderingene gjorde de uavhengig av hverandre og sammenlignet seg i mellom i etterkant. Der det var uenighet om vurderingene, ble vurdering gjort av en tredje person og inklusjon eller eksklusjon ble avgjort ved konsensus.

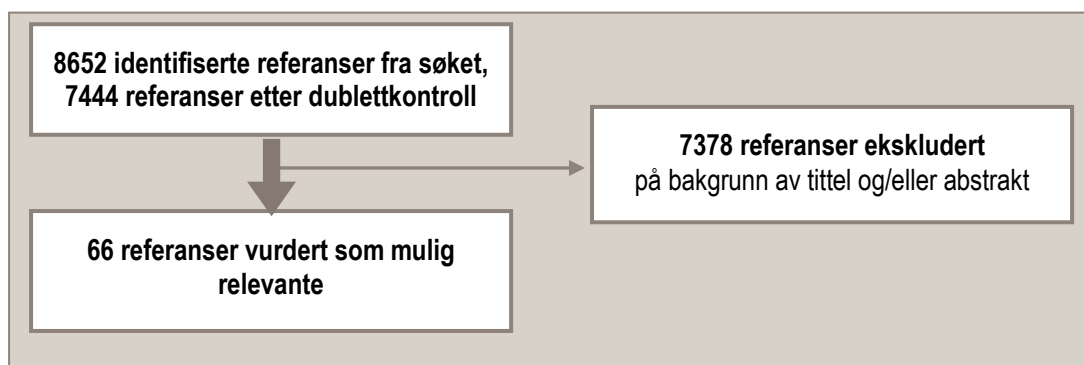
Utvelging av litteratur var kun basert på tittel og sammendrag. Vi bestilte ikke fulltekst av artiklene.

Resultat

Resultat av søk

Søket resulterte i 8652 referanser. Etter dublettkontroll gjensto 7444 referanser. Vi vurderte 66 av de identifiserte referansene til å være mulig relevante i henhold til inklusjonskriteriene.

Figur 1. Flytskjema over identifisert litteratur



Resultat av sorteringen

De mulig relevante referansene er sortert i 4 ulike boligløsnings-/tiltakskategorier (se tabell 1). Studiene er også sortert etter type studiedesign (tabell 2). Det var ikke hensiktsmessig å sortere referansene etter geografi da de fleste studiene ikke hadde oppgitt dette i sammendraget.

Tabell 1: Antall studier sortert etter type boligløsning/tiltak

Boligløsninger/tiltak	66 studier
Bofellesskap for eldre med tilgang på servicetilbud og fellesarealer (retirement communities/villages)	28
Ulike typer seniorboliger	8
Boligomgivelser/arkitektur	9
Tilpasninger i hjemmet/teknologiske hjelpemidler	21

Tabell 2: Antall studier sorter etter studiedesign

Studiedesign	66 studier	
Oversiktsartikler	Systematiske oversikter	3
	Meta-analyser av RCT-er	2
	Ikke-systematiske oversikter	3
Eksperimenter	Randomiserte kontrollerte studier (RCT)	2
	Kvasieksperimenter	3
Longitudinelle studier	8	
Kvalitative studier	10	
Tverrsnittstudier med kontrollgruppe	12	
Tverrsnittstudier	8	
Ukjent/uklart design	15	

På de kommende sidene presenteres de inkluderte studienes titler og sammendrag.

Først presenteres sammendrag sortert etter type boligløsning/tiltak; 1. Bofellesskap for eldre med tilgang på servicetilbud og bofellesskap, 2. Ulike typer seniorboliger, 3. Boligomgivelser/arkitektur og 4. Tilpasninger i hjemmet/teknologiske hjelpemidler. Deretter presenteres de samme studiene sortert etter type studiedesign.

I vedlegg 2 presenterer vi referanseliste over de inkluderte studiene sortert alfabetisk etter førsteforfatter.

1. Bofellesskap for eldre med tilgang på servicetilbud og fellesarealer

Buyrs LR. Life in a Retirement Village: Implications for Contact with Community and Village Friends. *Gerontology* 2001 Jan;47(1):55-9.

Abstract: Background: Friends provide acceptance, companionship, emotional support, and are important to mental health. One reason that older adults give for seeking alternative accommodations is to reduce their loneliness and isolation. Objective: The purpose of this study was to investigate whether older adults living in a retirement village have varying amounts of contact with friends who live within the retirement village or in the wider community. Methods: Three hundred and twenty-three independently living residents of 25 retirement village sites were interviewed. Participants were asked a range of open and closed questions about the amount and kind of contact they had with co-resident friends and community-based friends. Results: Residents engaged in several weekly visits with village friends and maintained regular contact with community friends through telephone calls. Few residents engaged in community outings or participated in village activities with either village or community friends. Conclusion: The nature of living in close proximity with other people, influences the amount of informal contact they have with friends. For those older individuals who seek alternative accommodation due to isolation or loneliness, re-location to congregate-style accommodation may increase their social contacts and have a positive impact on their well-being.

Elbert K, Neufeld P. Indicators of a successful naturally occurring retirement community: a case study. *Journal of Housing for the Elderly* 2010 Jul;24(3-4):322-34.

Abstract: A naturally occurring retirement community (NORC) with supportive service programs holds great promise for providing cost-effective services to enable seniors to age in place. This article describes program activities, services, partnerships, and indicators for a successful 3-mile suburban neighborhood NORC. Program evaluation of participation and exit data are powerful indicators of success: St. Louis NORC's nursing home placement rate is 2% compared to the national average of 4.5%, and its state average of 4.8%. A case study demonstrates the importance of resident awareness of availability of NORC services and home modifications.

Young Y, Spokane LS, Shaw BA, MacEra MA, Krout JA. Effects of On-Site Comprehensive Service Access with Service Coordination on Selected Health Outcomes in Retirement Communities in the U.S.A. *Hallym International Journal of Aging* 2010;12(1):47-61.

Abstract: Increasing numbers of older adults are entering congregate senior housing, such as continuing care retirement communities (CCRCs) and independent living communities (ILCs), where different levels of on-site comprehensive service access are provided. The purpose of this study was to examine the effects of on-site comprehensive service access on physical functioning and psychological well-being among older adults residing in two congregate senior housing facilities. In-person interviews were conducted with 140 residents living in independent apartments in a CCRC and an ILC. Multiple

logistic regression showed that residents of the CCRC had a greater sense of control over their future health (OR = 2.51, p = .04) and more interest and pleasure in daily activities (OR = 3.27, p = .04) compared to ILC residents. No differences in ADLs, IADLs, or perceived quality of life were found between these two groups. These findings serve as a first step in examining the potential benefits of on-site comprehensive service access on the health and well-being of residents living in retirement communities. Keywords: aged, comprehensive, care, retirement, community. Adapted from the source document.

Lough MA, Schank MJ. Health and social support among older women in congregate housing. *Public Health Nursing* Vol 13(6), Dec 1996, pp 434-441 1996;(6):Dec-441.

Abstract: Reports on the health status and social support of elderly women residing in congregate housing in order to add to the developing paradigm of aging, as well as to assist nurses and other health care professionals in formulating appropriate intervention strategies to meet the needs of this segment of the population. 47 women aged 65 yrs and older were interviewed using a structured questionnaire. The conceptual model used is based on the ecologic framework which focuses on the biomedical and psychological explanations for health and behavior including factors in the physical and social environment. Results showed that perceptions of positive health status and adequate social support do not decline with age. The relationship between health status and social support reflects the reciprocal nature of person and environment found in the ecologic model.

Berkowitz SG, Ficke RC (2000): Evaluation of the HOPE for elderly independence demonstration program and the new congregate housing services program, Research Triangle Institute,

<http://www.huduser.org/portal/searchbiblio/Bibliography&id=11053>

Abstract mangler.

Berkowitz SG, Ficke RC (2000): Evaluation of the HOPE for elderly independence demonstration program and the new congregate housing services program, Research Triangle Institute,

<http://www.huduser.org/portal/searchbiblio/Bibliography&id=11053>

The purpose of creating federal assistance programs for the elderly is to open up existing housing programs to a population too frail to gain access into the highly competitive market for federal funds. This report is an evaluation of two elderly assistance programs provided by HUD: the HOPE for Elderly Independence Demonstration Program (HOPE IV) and the New Congregate Housing Services Program (CHSP). Both provide housing assistance through case management and supportive services with limitations in personal care and home management activities. The report looks at the projects that were funded by the two programs and how the money HUD provided was utilized. While both programs target similar elderly populations, provide many of the same services, offer service coordination, and are designed to help frail elderly persons live independently; one major difference is that HOPE IV is tenant-based and CHSP is project-based. That is, HOPE IV provides supportive services in the homes of the participants or in other community locations, whereas CHSP provides services in apartment housing developments designed for frail elderly and disabled persons and are available to eligible residents meeting program requirements. The authors of the report took into consideration the participants health, quality of life, medical care type, and demographic and housing characteristics when evaluating the two programs. Overviews of the benefits received by the participants and the steps taken toward

the implementation into the programs are also examined in the report. To measure the elderly participant's mental health and life satisfaction an evaluation of the informal assistance, social support, and service utilization provided by the programs are the last aspects evaluated in the report.

Lawton PM. (1976): The Relative Impact of Congregate and Traditional Housing on Elderly Tenants. *Gerontology*, 16(3):237-242.

Tenants moving into congregate (N = 78) and traditional housing (N = 122) were studied immediately before and one year after occupancy in order to determine what changes in well-being might be ascribed to the difference in levels of supportive services offered in the two environments. Congregate-housing tenants showed relative improvements in morale, housing satisfaction, and available social network, and decreases in two measures of involvement with the external world, compared to traditional-housing tenants. The results are discussed in terms of the Lawton and Nahemow ecological model. The risks of encouraging dependence in congregate housing are discussed and it is concluded that these risks may be countered by environmental planning and programmatic intervention.

Research Triangle Institute (1996): Evaluation of the New Congregate Housing Services Program: Second Interim Report. <http://www.huduser.org/portal/searchbiblio/Bibliography&id=7472> This report describes the grantees in HUD's Congregate Housing Services Program (CHSP), baseline characteristics of program participants, and initial reactions of participants to the program. CHSP provides professional service coordination and non-medical supportive services such as housekeeping, personal care, congregate meals, and transportation. It replaces a program originally approved in 1978. Eligibility is based on residents' needs for assistance with a defined set of activities of daily living (ADLs). In 1993 HUD and the Farmers Home Administration awarded first-round grants to 27 grantees in 44 federally assisted developments throughout the United States, and most had started providing services 1 year later in spite of some start-up problems. Almost two-thirds of the congregate programs were established in public housing or Section 202 buildings. Most CHSP participants are elderly, and many have "aged in place" in their current dwelling. Typically, they are white females over 75 years old, with significant limitations in ADLs. They live alone, but have frequent contact with friends and family. Most are satisfied with the services and credit CHSP with making it possible to live independently. The report identifies the service coordinator's role as pivotal to program success, encompassing intake, determining eligibility, and service needs assessment with the professional assessment committee. Participants also see them as more using them as counselors and problem solvers.

Urban Systems Research and Engineering (1976): Evaluation of the effectiveness of congregate housing for the elderly <http://www.huduser.org/portal/searchbiblio/Bibliography&id=50008>

Using data obtained from a sample of 27 congregate housing sites, this study provides a comprehensive and detailed report on the range of congregate housing facilities for the elderly that exists in the United States and evaluates the impact of congregate housing on the elderly. For the purposes of the study, congregate housing is defined as "age - segregated housing built specifically for the elderly (62 years and over) which provides, at the very least, an onsite meal program." The study describes how congregate facilities are developed and managed, how services are provided, and the associated costs of these activities. It was found that age - segregation, an integrated housing and services package, and a noninstitutional environment are the characteristics applicable to all 27 sites in the sample. Be-

yond these basic characteristics, they vary widely in the services offered, their physical design, and management policies and practices. In terms of sociodemographic characteristics, the residents of the housing in the sample represented all the major sectors of the national elderly population, with the exception of an underrepresentation of blacks. Congregate housing was found to fulfill basic shelter and service needs, help maintain the independence of the residents, and facilitate social relationships. Problems are noted in the areas of cost, a lack of contracted services, and the financial risks of the "life care" contract between residents and management. The appendices contain the sampling design, matrices and supplementary tables, and a bibliography.

Gutman GM. Issues and findings relating to multilevel accommodation for seniors. *Journal of Gerontology* Vol 33(4), Jul 1978, pp 592-600 1978;(4):Jul-600.

Abstract: Tenants in self-contained suites and board-residence in a building also offering personal care were interviewed pre- and post-move and were compared with (a) tenants in more traditional retirement housing offering only self-contained suites, (b) applicants who did not move in, and (c) elderly nonapplicants. Results show no evidence of differential decline, relative to controls, in the self-reported health status, level of interaction with family and friends, or activity level of those who moved to the multilevel facility. If anything, benefits accrued from the move in the form of higher morale and increased interaction with neighbors. Furthermore, more Ss in the multi-level tenant group than in any other group felt that they had more friends and that they were "getting out" and "dressing up" to a greater extent than when interviewed 18 mo earlier. These findings should help to allay the fears of those concerned that the well-elderly might find it depressing to be among those less competent and that the availability of on-site meals, housekeeping and nursing services, and recreation might foster dependency and/or disengagement from the broader community.

Srapyan Z, Armenian HK, Petrosyan V. Health-related quality of life and depression among older people in Yerevan, Armenia: a comparative survey of retirement home and household residents aged 65 years old and over. *Age Ageing* 2006;35(2):190-3.

Abstract mangler.

Fonad E, Wahlin TR, Heikkila K, Emami A. Moving to and living in a retirement home: focusing on elderly people's sense of safety and security. *Journal of Housing for the Elderly* 2006 Jul;20(3):45-60. Abstract: Bad health combined with deteriorating physical functions force many elderly people to move to a retirement home. The primary focus of this study was to investigate the resident's experience of safety and security. From a sample of 57 residents, 12 persons volunteered to participate in the interview. Data were analyzed with qualitative content analysis. The standard and design of the participant's previous home made mobility difficult and this affected their sense of security. This motivated them to move into an environment where they felt more secure. The environment at the retirement home was predominantly described as secure and safe. The finding shows that the participants felt that safety and security were more important than independence.

Laumonier, C (1994): Integrated housing for living at home and setting up service centres: an original experiment in Tououse for enabling the elderly to remain in their own homes, <http://www-opengrey.eu/item/display/10068/9614>

Mangler abstract.

Heisler E, Evans GW, Moen P. Health and Social Outcomes of Moving to a Continuing Care Retirement Community . *Journal of Housing for the Elderly* 2004;18(1):5-23.

Abstract: This study investigates the experience of moving into a continuing care retirement community (CCRC) for those moving locally (intra-county) & from more of a distance (outside the county). Specifically, we compare the social contacts & health of long-distance & local movers before & after their moves. A sample of older adults were interviewed a few months before they moved into a Northeast, US CCRC & a year & a half after they had moved. As predicted, long-distance movers were more apt to experience physical health declines in terms of percentage of health conditions experienced, as well as perceived health status. No such health declines were found for local movers. Contrary to expectations, the greater health declines of long-distance movers were independent of their social network contacts, regardless of whether these relationships were with family or friends. Moreover, our evidence suggests that moving to a CCRC does not affect social integration or perceived social support with distance movers actually more likely than local movers to make new friends within the CCRC.

Froneman CA, van Huyssteen MKR, van der Merwe IJ. Retirement Villages and Related Care Services: Perceptions, Preferences and Needs of Elderly Consumers and Providers in Cape Town. *Maatskaplike Werk/Social Work* 2004 Oct;40(4):413-29.

Abstract: This article describes the findings of a study in the Cape Metropolitan Area & its fringe districts of the perceptions, preferences & needs of elderly persons & the views of housing providers for the elderly regarding retirement housing & related care services. Interviews were conducted with 228 sampled elderly persons in neighbourhoods with a high concentration of the elderly & in selected retirement villages in the study area. The views of experts on retirement housing & role players in the field of elderly care were elicited separately. The basic preferences of the elderly can be summarized as: renting residential units instead of buying them; no luxuries such as therapy services; safety considerations incorporated in the design of the interior of the units; being able to use their own furniture in the units; primary health care offered; availability of recreational facilities; good corporate management; & accessibility to essential general services (in terms of the location of the village). These findings are considered for consumers in different cultural & socio-economic groups & are also compared with the views of developers, housing providers & other role players. It is contended that -- given the Government's new policy on housing & care for the elderly -- the findings may assist the providers of retirement housing & related care services to understand the diversity of needs of the South African mature retirement market & to provide facilities & services accordingly.

Young Y, Inamdar S, Hannan EL. Comparison study on functional outcomes and perceived quality of life between all-inclusive and fee-for-service continuing care retirement communities. *Journal of the American Medical Directors Association* 2010;11(4):257-62.

Abstract: OBJECTIVE: To examine the associations between 2 types of continuing care retirement communities' (CCRC) residents regarding physical function and perceived quality of life. METHODS: Cross-sectional study (n=406). Eligibility criteria include age 65 years or older, residents of independent living units, and intact cognition (MMSE \geq 24). All-inclusive CCRCs provide unlimited access to home health services and nursing home care as needed in return for the entry and monthly fee. Fee-

for-service CCRCs offer home health and nursing home services at a full fee-for-service rate. Outcomes were functional status (ADLs and IADLs) and perceived quality of life. Multivariate regressions were used to examine the associations between residents of different types of CCRCs on selected outcomes while adjusting for covariates. RESULTS: The all-inclusive CCRC sample was more likely to be married (53.8% versus 33.4%; $P < .001$), with more years of education (17.9 versus 14.4; $P < .0001$), and had few physician visits in the previous year in comparison to the FFS CCRC sample. Multivariate results indicate that the FFS group had worse ADL (beta=0.95; $P=.0003$), IADL (beta=0.57; $P=.02$) function than the all-inclusive group. There was no significant difference in perceived quality of life scores between the 2 groups. CONCLUSIONS: Residents of both CCRCs reported equally good quality of life scores. Residents of the all-inclusive CCRC seem to have had better ADL and IADL function than the FFS CCRC residents. Prepaid home health services and nursing home care in the all-inclusive CCRC may facilitate ADL and IADL functional independence.

Sherman SR. Satisfaction with retirement housing: Attitudes, recommendations and moves. *Aging & Human Development* Vol 3(4), Nov 1972, pp 339-366 1972;(4):Nov-366.

Abstract: Studied the satisfaction of 600 persons living in 6 types of housing facilities for the well-elderly: retirement hotel, urban high-rise, life-care home, and retirement villages appealing to 3 different socioeconomic groups. Responses were compared to those given by matched controls who lived in conventional housing. There were 3 measures of satisfaction: a direct global question, a series of projective questions, and moves away from site, which included actual moves and those being contemplated. Among the factors related to satisfaction with retirement housing were: proximity, security, balance or independence-dependence, proper amount of age-segregation, psychological readiness, provision of creature comforts, degree of financial commitment, reference group and relative satisfaction, and alienation and integration.

Kingston P, Bernard M, Biggs S, Nettleton H. Assessing the health impact of age-specific housing. *Health and Social Care in the Community* 2001;9(4):228-34.

Abstract: It has been claimed that 'retirement communities', defined in this instance as voluntary communities of older people living in shared, purpose-built housing, combine the best attributes of residential and community living. Subjective health status may thereby be improved through a culture in which independence and autonomy are actively promoted. Concern has also been raised that age-segregated communities of this sort might produce 'ghettos' of increasing dependency and service demand. This study, conducted over a 12-month time period, found that when compared to older people living in the local neighbourhood, the retirement community population maintained their physical and mental health (utilising measures including the SF36, Life Satisfaction Index, and 18 semantic differentials). Investigation of these findings indicated that peer support and safety/security, and 'autonomy with inclusion' were key factors in maintaining health status.

Grant BC. Retirement villages: more than enclaves for the aged. *Activities, Adaptation & Aging* 2006 Dec 15;31(2):37-55.

Abstract: This study examined how the day-to-day experiences of 112 participants living in 12 different New Zealand retirement villages influenced their lifestyle and quality of life. Although acknowledging some limitations of this type of living, the participants refuted what they deemed to be a public percep-

tion that these places are enclaves for the aged and detract from positive active aging. Rather they described how their respective village provided an endless array of opportunities to rekindle old skills and become involved in new ones. It was claimed this helped contribute to a "Culture of Rejuvenation"- the theme for the results presented in this article. Many of the participants spoke of how since relocating to a retirement village they had found a more definite purpose to their lives. Irrespective of their state of well-being they felt valued members of a secure and supportive community and this helped develop a genuine sense of belonging. It was evident these qualities enhanced one's identity and quality of life.

Gardner IL, Browning C, Kendig H. Accommodation Options in Later Life: Retirement Village or Community Living? *Australasian Journal on Ageing* 2005 Dec;24(4):188-95.

Abstract: Objectives: To assess retirement villages as an accommodation option for older people by examining the impact on quality of life of moving to a village. Method: A cross-sectional survey of three groups: residents of independent living units of two retirement villages & a group of older people who considered moving but decided to remain living in the community. Results: The quality of life of all groups at interview was high. However, the village group's overall satisfaction with life, & satisfaction with friendships & social life, was better after moving, whereas the community group were more likely to say that their quality of life was the same or worse since looking at moving to a village. Conclusions: Retirement villages can be a viable accommodation option in later life & enhance quality of life. The results of this study have implications for government policy, public & private housing providers, & older people.

Erickson M, Krout J. AGING IN PLACE IN DIFFERENT HOUSING ARRANGEMENTS: PATHWAYS TO HEALTH AND SATISFACTION. *The Gerontologist* 2004;44(1):594.

Abstract: An abstract of a study by Erickson and Krout examining the relationship between type of housing and changes in health and well-being over a four year period is presented. Results show that the senior housing residents report the lowest ratings of health, are more likely to have been hospitalized, and report more functional limitations than the other two groups. They are also the most likely to have diabetes, hypertension, and heart disease.

Harrison EL, Fisher KL, Lawson JA, Chad KE, Sheppard MS, Reeder BA, et al. Exploring the role of housing type on physical activity and health status in community-dwelling older adults. *Activities, Adaptation & Aging* 2010 Apr;34(2):98-114.

Abstract: This study compared physical activity (PA) and perceived health status in older adults living in seniors' housing (SEN) versus those living in nonseniors' housing (NON). After adjusting for potential confounders, PA levels were significantly higher in the NON group. No significant differences in health status were evident between housing groups. Regression analyses showed that both physical and mental health status were associated with PA level in the NON group. In the SEN group, only physical health status was significantly associated with PA level. This supports a positive relationship between health status and physical activity levels in older adults regardless of housing arrangement.

Poulin JE. *Age Segregation and the Interpersonal Involvement and Morale of the Aged*. 1984.

Abstract: Compared the interpersonal involvement and morale of elderly persons residing in the community (N=154) and senior citizen housing (N=78). The senior housing residents had slightly larger and more supportive interpersonal networks but less contact with their closest friends. No differences were found in the two housing groups' life satisfaction.

Lawton MP, Cohen J. The generality of housing impact on the well-being of older people. *Journal of Gerontology* Vol 29(2), Mar 1974, pp 194-204 1974;(2):Mar-204.

Abstract: Investigated the effect of rehousing on the social and psychological well-being of older people in a longitudinal comparison-group design. 574 applicants for senior housing and 324 elderly community residents were interviewed; 591 from both groups were interviewed 1 yr later. Change over time among the rehoused was compared to that among the comparison Ss by means of multiple regression analysis which controlled for original state of well-being, demographic characteristics, and initial state of health. The rehoused were significantly better off than the community residents on 5 factor-derived indices, poorer in functional health, and not different by 3 other indices. The size of the favorable effect was small but relatively stable. The general significance and limitations of research on this topic are discussed.

Bernard M, Bartlam B, Sim J, Biggs S. Housing and Care for Older People: Life in An English Purpose-Built Retirement Village. *Ageing Society* 2007 Jul;27(4):555-78.

Abstract: Retirement communities are a relatively new long-term accommodation and care option in the United Kingdom. Policy makers and providers endorse the proposition that they are suited for the accommodation of both 'fit' and 'frail' older people, although comparatively little is known about what it is actually like to live in such communities, about whether they cater adequately for older people with a wide spectrum of needs and abilities, or if they provide acceptable solutions to older people's housing or care needs. This paper addresses these questions by reporting the findings of an independently funded three-year study of a new retirement village, Berryhill, in the north Midlands of England. The paper examines the background to this and similar developments, details how the study was carried out, and then examines what it was like to live at Berryhill. It focuses on the housing and care aspects, and explores the residents' motivations for moving to the village; their views about the accommodation; and their use of and satisfaction with the social and leisure amenities. The health and care needs of residents and the formal and informal supports are also featured. The conclusion discusses whether the village can truly be a 'home for life' in the face of increasing frailty, and whether or not these new models of accommodation and care can indeed cater for both 'fit' and 'frail' older people.

Bernard M, Liddle J, Bartlam B, Scharf T, Sim J. Then and now: evolving community in the context of a retirement village. *Ageing & Society* 2012;32(1):103-29.

Abstract: There is currently much debate in the United Kingdom policy and practice literature about how best to respond to the care and accommodation needs of people as they retire and grow older. Against a policy background which espouses the benefits of 'lifetime homes and lifetime neighbourhoods', the growth of purpose-built segregated retirement villages looks somewhat contradictory and is set to transform the housing scene. Whilst there has been considerable research into these environments in countries like the United States of America and Australia, we know comparatively little about what it is like to live in British retirement communities, how they evolve over time and whether they

enhance people's lifestyle aspirations and quality of life. This paper examines these issues through the lens of 'community' and in the context of Denham Garden Village: a purpose-built retirement village in Buckinghamshire. Drawing on a range of qualitative data (from individual and group interviews, diaries and directives), we focus on how 'community' was conceptualised, experienced and understood both 'then' (in the early days of the village) and 'now' (subsequent to its redevelopment). The findings enable us to examine the extent to which 'community' evolves over time and raise important questions about how socially cohesive, or not, such retirement villages are.

Story BW. A comparison of self-esteem of older adults in age-segregated and age-integrated residential environments. *Dissertation Abstracts International Vol 44(1-A)*, Jul 1983, pp 140
Abstract mangler.

Husaini BA, Moore ST, Castor RS. Social and Psychological Well-Being of Black Elderly Living in High-Rises for the Elderly. *Journal of Gerontological Social Work* 1991;16(3 -- 4):57-78.

Abstract: Using an ecological perspective, the relationship between psychological well-being & living environment is examined among 600 black elderly living in age-segregated housing in Nashville, Tenn, comparing individuals living in senior high-rise (HR) apartments with their counterparts in community housing (CH). Analysis of census-tract & interview data reveals: HR elderly are less likely to be married, have lower incomes, receive less social support, have poorer health, experience more stress, & have higher levels of depression than do their CH peers. The HR group also has higher rates of schizophrenia & simple phobia, & are more likely to experience at least one mental disorder. It is concluded that human needs & problems are constituted by the transactions among people & their environment.

Cutchin MP, Marshall VW, Aldrich RM. Moving to a Continuing Care Retirement Community: Occupations in the Therapeutic Landscape Process. *Journal of Cross-Cultural Gerontology* 2010 Jun;25(2):117-32.

Abstract: The process of transitioning into, and living in, a retirement community can be usefully examined with the concept of 'therapeutic landscapes.' While underutilized in anthropology and gerontology, the concept offers a combination of geographical and cultural views on the place and well-being relationship. The inclusion of an occupational science perspective, wherein occupations (or everyday activities of meaning) are seen as a crucial part of the person-place relationship, should enhance the therapeutic landscape perspective of older persons and their retirement communities. We present a case study analysis that attempts to combine these perspectives and examine the role of occupation in the lives of older people who moved to a Continuing Care Retirement Community (CCRC). 116 movers completed pre- and post-move questionnaires about their levels of engagement in 20 activities. Frequency distributions, paired t-tests, and logistic regression analyses performed on the data indicate that while overall levels of activity did not change from pre- to post-move, patterns of engagement did change in the course of the move to the CCRC. Some social and cultural activities (e.g., parties, concerts, movies, meetings) increased in frequency, and some maintenance chores (e.g., grocery shopping, housekeeping) and communication (email) decreased in frequency. Moreover, total activity engagement after the move was associated with residential satisfaction in the CCRC. Even with their limitations, the data and analytical findings suggest that occupations are an important part of the CCRC therapeutic landscape process.

2. Ulike typer seniorboliger

User evaluation of housing for the elderly. *The Gerontologist* Vol 16(2), Apr 1976, pp 102-111
1976;(2):Apr-111.

Abstract: Studied the long-range effects of improved housing upon old people. 190 tenants (mean age, 72 yrs) of housing designed for the elderly were interviewed after 1 yr of residence, and 127 remaining original tenants were reinterviewed 7 yrs later. Results indicate that tenants were well-satisfied, and the primary determinants of their satisfaction were good qualities of the physical environment. While well-satisfied with their own milieu and reluctant to criticize it, tenants were forthcoming with suggestions for improving future facilities. Moreover, they immediately noted and continued to report that certain design features, especially included to facilitate living for the elderly, proved to be unusually inconvenient for them.

Crist PA. Does quality of life vary with different types of housing among older persons? A pilot study. *Physical & Occupational Therapy in Geriatrics* 1999 May;16(3/4):101-16.

Abstract: With the increasing number of persons who are elderly, identification of the characteristics of optimal housing that contribute to meeting the various needs of older persons is essential. A pilot study to identify the effects of three different housing environments (personal dwellings, specialized housing and nursing homes) on reported quality of life was conducted, using the Flanagan Quality of Life Scale plus two general health items, among persons over the age of 65 (n = 87). Significant differences were found in several quality of life issues related to relationships and satisfaction with life. Persons in specialized housing consistently reported good quality of life related to socialization. While individuals in each group reported no difference in the importance of each quality of life factor, individuals in the nursing home consistently reported the lowest quality of life. The implication of this study for housing placement, transition, planning, and creating housing contexts that promote quality of life are discussed.

Carp FM. A Senior Center in Public Housing for the Elderly. *Gerontology* 16[3], 243-249. 1976.

Abstract: In terms of people who lived under the same roof, a Senior Center within housing for the elderly was highly satisfactory and widely and frequently used. In terms of the elderly who lived elsewhere, it seems to have had little effect.

Altus DE, Mathews RM. A Case Study Evaluation of the Homecare Suite: A New Long-Term Care Option for Elders. *Journal of Housing for the Elderly* 1999;13(1-2):115-25.

Abstract: Four US families participated in a pilot test of the Homecare Suite -- a private, fully accessible, modular apartment for elders that can be temporarily installed in the garage of family caregiver's home. Each family took part in at least two in-depth interviews before & during their use of the Homecare Suite. Results show that both users & caregivers were satisfied with the Homecare Suite & preferred it to alternatives for reasons including increased peace of mind, ease of providing care, accessibility, privacy, & cost. Results suggest that the Homecare Suite is deserving of further study as a long-term care option. 1 Table, 2 Figures, 3 References. Adapted from the source document

Altus DE, Xaverius PK, Mathews RM, Kosloski KD. Evaluating the impact of elder cottage housing on residents and their hosts. *Journal of Clinical Geropsychology* Vol 8(2), Apr 2002, pp 117-137
2002;(2):Apr-137.

Abstract: The purpose of this study was to evaluate the impact of Elder Cottages on a variety of resident and host outcomes. A nonequivalent comparison group design was used. 31 treatment group residents and their hosts received Elder Cottages whereas 24 comparison group residents and their hosts remained on a waiting list. Results showed that residents using Elder Cottages reported significantly greater satisfaction with their housing, increased independence, more telephone contacts with friends and family, improved relationships with hosts, more accessible housing, and less formal service use than those in the comparison group. Similarly, hosts in the treatment group reported significantly greater satisfaction with the residents' housing and less stress in their caregiving roles than those in the comparison group. In addition, fewer Elder Cottage hosts than comparison group hosts engaged in caregiver-related driving. Answers to short-answer questions mirrored the quantitative findings. Results provide substantial optimism with respect to the Elder Cottage as a housing option for older adults, although interviews with housing specialists suggested that families will need financial and caregiving assistance for this option to be viable.

Jackel M. Housing in old age: Findings from an empirical study. *Zeitschrift fur Gerontologie* Vol 25(5), Sep-Oct 1992, pp 325-330 1992;(5):Sep-Oct.

Abstract: Studied satisfaction with living conditions in residents of government-subsidized apartment complexes for senior citizens in a West German city. Ss were 285 normal male and female West German older adults (aged 60-90 yrs). Ss were interviewed with regard to their housing needs and their satisfaction/dissatisfaction with their apartments and with the physical and social aspects of their apartment buildings and their neighborhoods.

Nussbaum JF. An Initial Investigation Into the Interaction Behavior of Elderly Individuals Across Three Living Environments. 1981

Abstract: A study investigated whether the interactive behaviors of elderly individuals were significantly influenced by their environment. The key to the investigation was the notion that human interaction can function to aid elderly individuals as they adapt to aging. Subjects were individuals over 65 years of age living in one of three separate environments: (1) 60 individuals who owned their own homes and resided in those homes for more than ten months out of each year; (2) 30 living in a retirement village; and (3) 30 residing in a nursing home facility. A questionnaire was designed to gather information about the subjects' communication behavior patterns and their ability to adapt to aging. Among the results, it was found that those living at home interacted more with family and reported greater relational quality with family; those individuals living in a retirement village interacted more with friends and reported closer relationships with friends than with family; and individuals living in a nursing facility were greatly restricted in their frequency of interaction with both family and friends, and reported much less relational quality with both family and friends. Surprisingly, the elderly at home and in the retirement community discussed their health significantly more than did the elderly in the nursing facility. Also, those at home and in the retirement village discussed community events as well as world and

national events much more than did the elderly in the nursing home, indicating more interest in the social activity of both the neighborhood and the country.

3. Boligomgivelser/arkitektur

Barnes S, Design in Caring Environments Study Group. The Design of Caring Environments and the Quality of Life of Older People. *Ageing and Society* 2002 Nov;22(6):775-89.

Abstract: There has been little systematic research into the design of care environments for older people. This article reviews empirical studies from both the architectural & the psychological literature. It outlines the instruments that are currently available for measuring both the environment & the quality of life of older people, & it summarizes the evidence on the layout of buildings, the sensory environment, & the privacy of residents. The conclusion is drawn that all evidence-based design must be a compromise or dynamic &, as demands on the caring environment change over time, this compromise must be revisited in the form of post-occupancy evaluation.

Reddick J. The interdependence of health and housing for the elderly. *Journal of Housing for the Elderly* Vol 2(4), Win 1984-1985, pp 77-82

Abstract: A survey was done of the environmental conditions in 5 senior citizen housing apartment buildings over a period of 5 yrs. It was found that health problems of the residents had to be considered in association with the details of design and environmental conditions. Problems in the senior citizen housing had to do with building location and construction and design details. There were problems related to poor insulation and heating; high steps between floors; poor colors of walls, halls, and floors; and poor finish.

Kochera A, Bright K. Livable Communities for Older People. *Generations* 2006 Jan;29(4):32-6.

Abstract: Draws upon the results of the Beyond 50.05 survey conducted by AARP's Public Policy Institution during the summer of 2004 to explore the relationship between community features & the participation of older residents in social & civic activities. Emphasis is placed on the impact of such physical features as lever door handles, non-slip floors, & no-step entrances on a persons personal independence & the ability to remain socially active. The survey results indicated that people living in homes that they felt would not meet their needs as they grew older were less likely to know their neighbors or be involved in organizations, charitable work, or other community/political activities. In addition, respondents with positive perceptions of the surrounding community had higher levels of community engagement. Emphasis is also placed on the importance of a community's ability to provide such elements as safe neighborhoods; accessible buildings; affordable housing options; places for older people to socialize; dependable public transportation; & community support services. The policy implications are discussed.

Duffy M, Weinstein CE. Architectural Design Characteristics of Public Housing and Well-Being of the Elderly . 15. 1978.

Abstract: The physical environment can measurably affect behavior and psychological well-being. This is critical in the case of older persons who are more environmentally vulnerable than the young due to

limited financial resources and decreased mobility. A group of 91 elderly residents in multi-story private and public housing participated in this study. Specific design factors investigated were: type of housing, floor level, distance to elevators, number of bedrooms, length of corridor and position on corridor. These factors were examined in relationship to several theoretically-relevant dependent measures: social engagement, morale, physical and emotional health. Multiple regression analyses revealed several significant relationships. Living on short corridors was related to increased social interaction. Persons living at the ends of corridors were higher in morale. Proximity to elevators was positively related to the proximity of close friends. Home-owners and apartment-dwellers had more social roles and relationships than persons living in rented houses. Findings suggest a human factors focus in architectural planning for the elderly.

Lawton MP, Nahemow L, Tsong-Min-Yeh (1980): Neighborhood environment and the well-being of older tenants in planned housing, *The International Journal of Aging and human Development*, 11 (3):211-227

The relationship between neighborhood characteristics and the well-being of elderly tenants was studied through a national area probability sample of 153 planned housing environments and over 3000 tenants in them. Six indices of tenants' psychological and social well-being were used as dependent variables in hierarchical multiple regressions where neighborhood characteristics were entered after personal factors were controlled. Neighborhood environmental factors accounted for a significant proportion of the residual variance in every index of well-being. In general, quiet neighborhoods in small or middle sized communities where the risk of crime was low were conducive to active and satisfying lives for older people. Well-being tended to be higher in segregated buildings even with other factors such as exposure to crime controlled. Although these residual effects were often small it was concluded that environmentally based interventions could significantly enhance well-being and in many instances have more widespread effectiveness than time-consuming attempts to change the individual.

Devlin AS. Housing for the elderly: Cognitive considerations. *Environment and Behavior* Vol 12(4), Dec 1980, pp 451-466 1980;(4):Dec-466.

Abstract: A postoccupancy evaluation of highrise vs garden apartment housing was carried out with 77 residents of 2 highrise and 2 garden apartment public housing complexes for the elderly. The purpose was to assess the impact on satisfaction and coping ability of an array of design configurations and features, such as spatial layout and corridor discriminability, suggested by an information-processing theoretical framework. Findings from lengthy interviews with each S indicate that design solutions influence resident's degree of disorientation and perception of hazards and provide different kinds of satisfactions. Court residents derive satisfaction from physical aspects of ground-level design and proximity to nature, while highrise residents experience greater attentional demands and confusion but have a supportive social environment.

Duffy M, Willson VL. The role of design factors of the residential environment in the physical and mental health of the elderly. *Journal of Housing for the Elderly* Vol 2(3), Fal 1984, pp 37-45 1984;(3):Fal-45. Abstract: To examine the relationship between selected dimensions of architectural design and physical and mental health in the elderly, 171 elderly residents (aged 60+ yrs) of congregate public housing and of private housing who were ambulatory and suffered from no incapacitating disabilities completed

a geriatric morale scale, the Cornell Medical Index-Health Questionnaire, and several indices of social interaction. Design factors included congregate public vs private housing; high- vs low-rise housing; floor level; position on corridor; length of corridor; and home ownership vs renting. Data were analyzed using stagewise multiple regression. Results show that Ss in congregate housing, Ss in high-rise buildings, and those living at the end sections of corridors were significantly higher in morale, but not in physical or mental health, than other Ss. Contrary to R. Sommer's (1966) contention, social interaction did not contribute significantly to this relationship.

Guzzardo MT. Accessibility of the residential environment: Its influence on the depressive symptoms of older adults. *Dissertation Abstracts International: Section B: The Sciences and Engineering Vol 71(9-B)*, 2011, pp 5352

Abstract: As people age, a supportive and accessible environment becomes more salient in the face of declining functional capacity. Whereas past research supports a relationship between residential environment and well-being, few studies have focused on the specific relationship between the accessibility of the home and mental health. The purpose of the present study is to examine the influence of barrier-free/accessible features in the home on elderly individuals' depressive symptoms, when they experience difficulty with activities of daily living. The barrier-free/accessible features that are investigated include: ramps, railings, wheelchair modifications, grab bars, shower seats and call devices. This study uses data products distributed by the RAND Corporation, based on the 2006 wave of the Health and Retirement Study. The analytic procedures are divided into three parts. In the first place, descriptive analyses were conducted, including independent sample t-tests. These analyses served the purpose of examining differences between key groups within the sample (ethnic group comparisons, and comparisons between senior housing residents and non-senior housing residents). In the second place, hierarchical multiple regression analyses were conducted to examine the features of the home as predictors of depressive symptoms, after controlling for difficulty with ADLs, and various socio-demographic variables. In the third place, the main purpose of the present study was to test the influence of the residential environment on depressive symptoms through a structural regression (SR) model, using Structural Equation Modeling. The model contains functional impairment as a mediator, while age, income, education, gender, and living arrangement function as exogenous variables. Overall, results provide support for the hypothesized model. Findings suggest that accessible dimensions of the physical environment can contribute to psychological well-being by playing a compensatory or assistive role and meeting the individuals' functional needs.

Tang JW, Brown RD. The Effect of Viewing a Landscape on Physiological Health of Elderly Women. *Journal of Housing for the Elderly* 2005;19(3-4):187-202.

Abstract: A quasi-experiment was undertaken to measure physiological characteristics of elderly women as they viewed different landscapes. Blood pressure & heart rate were monitored as elderly women living in a retirement centre viewed a natural landscape, a built landscape, & a control room with no view to the outside. Other characteristics of the individuals & the settings that have been shown to affect blood pressure & heart rate were controlled. The results indicated that, in all cases, viewing the natural landscape resulted in lower systolic & diastolic blood pressures & lower heart rates than those measured in the control room. Viewing the built landscape also had the general effect of lowering blood pressures & heart rates, but the effect was less consistent & the magnitude was smaller than that

caused by the natural landscape. Lowering of blood pressure & heart rate have both been shown to be positively correlated with increased health & well-being, indicating the benefit of simply viewing a landscape. These results have important implications for design of housing for the elderly. Even if individuals are unable or unwilling to go outside, they can still benefit from seeing out into a landscape.

4. Tilpasninger i hjemmet/teknologiske hjælpemidler

Gitlin LN, Miller KS, Boyce A. Bathroom modifications for frail elderly renters: outcomes of a community-based program. *Technology & Disability* 1999 Jun;10(3):141-9.

Abstract: Objectives. Little is known about the effectiveness of community-based programs that provide adaptive equipment to the elderly. This paper reports the results of an evaluation of a bathroom modification program (TAG ADAPT) that targets frail elders who are non-home owners. The purpose of the evaluation was to determine if clients: 1) improved in self-care, 2) encountered difficulties using equipment, 3) and continued to use equipment. The program is part of a community-based agency that provides housing advocacy services for elderly renters. **Study design.** A two-phase evaluation was used. Phase one involved an occupational therapist (OT) who observed bathing and toileting tasks of 34 clients prior to receiving bathroom equipment and provided instructions following its installation. Phase two involved a brief telephone survey of 75 clients who used TAG ADAPT services. **Results.** Clients were primarily African-American, female, lived alone and were 70 years or older. Clients who received OT intervention demonstrated significant improvement in bathing ($t = 2.65, p < .01$), ADL performance ($t = 3.01, p < .01$), and transferring ($t = 5.08, p < .000$). The telephone survey indicated that 18% of ordered equipment was not received by clients. Of equipment received, 84% was reported in use. However, 65% of clients reported either a safety or vendor-related difficulty with equipment items. **Conclusions.** The evaluation demonstrates the benefits of incorporating home modification as part of a housing advocacy service approach. It also suggests that home modification programs should use a professional assessment and adequate home or telephone follow-up to assure quality of equipment delivery, installation and safe use.

Stevens M, Holman CD, Bennett N, de KN. Preventing falls in older people: outcome evaluation of a randomized controlled trial. *J Am Geriatr Soc* 2001;49(11):1448-55.

Abstract: OBJECTIVES: To evaluate the outcome of an intervention to reduce hazards in the home on the rate of falls in seniors. **DESIGN:** Randomized controlled trial, with follow-up of subjects for 1 year. **SETTING:** Community-based study in Perth, Western Australia. **PARTICIPANTS:** People age 70 and older. **INTERVENTION:** One thousand eight hundred seventy-nine subjects were recruited and randomly allocated by household to the intervention and control groups in the ratio 1:2. Because of early withdrawals, 1,737 subjects commenced the study. All members of both groups received a single home visit from a research nurse. Intervention subjects ($n = 570$) were offered a home hazard assessment, information on hazard reduction, and the installation of safety devices, whereas control subjects ($n = 1,167$) received no safety devices or information on home hazard reduction. **MEASUREMENTS:** Both groups recorded falls on a daily calendar. Reported falls were confirmed by a semistructured telephone interview and were assigned to one of three overlapping categories: all falls, falls inside the home, and falls involving environmental hazards in the home. Analysis was by multivariate modelling of rate ratios

and odds ratios for falls, corrected for household clustering, using Poisson regression and logistic regression with robust variance estimation. RESULTS: Overall, 86% of study subjects completed the 1 year of follow-up. The intervention was not associated with any significant reduction in falls or fall-related injuries. There was no significant reduction in the intervention group in the incidence rate of falls involving environmental hazards inside the home (adjusted rate ratio, 1.11; 95% CI = 0.82-1.50), or the proportion of the intervention group who fell because of hazards inside the home (adjusted odds ratio, 0.97; 95% CI = 0.74-1.28). No reduction was seen in the rate of all falls (adjusted rate ratio, 1.02; 95% CI = 0.83-1.27) or the rate of falls inside the home (adjusted rate ratio, 1.17; 95% CI = 0.85-1.60). There was no significant reduction in the rate of injurious falls in intervention subjects (adjusted rate ratio, 0.92; 95% CI = 0.73-1.14). CONCLUSIONS: The intervention failed to achieve a reduction in the occurrence of falls. This was most likely because the intervention strategies had a limited effect on the number of hazards in the homes of intervention subjects. The study provides evidence that a one-time intervention program of education, hazard assessment, and home modification to reduce fall hazards in the homes of healthy older people is not an effective strategy for the prevention of falls in seniors.

Mann WC, Ottenbacher KJ, Fraas L, Tomita M, Granger CV. Effectiveness of assistive technology and environmental interventions in maintaining independence and reducing home care costs for the frail elderly. A randomized controlled trial. *Arch Fam Med* 1999;8(3):210-7.

Abstract: CONTEXT: Home environmental interventions (EIs) and assistive technology (AT) devices have the potential to increase independence for community-based frail elderly persons, but their effectiveness has not been demonstrated. OBJECTIVE: To evaluate a system of AT-EI service provision designed to promote independence and reduce health care costs for physically frail elderly persons. DESIGN: Randomized controlled trial. SETTING AND PARTICIPANTS: A total of 104 home-based frail elderly persons living in western New York were assigned to 1 of 2 groups (52 treatment, 52 control). INTERVENTION: All participants underwent a comprehensive functional assessment and evaluation of their home environment. Participants in the treatment group received AT and EIs based on the results of the evaluation. The control group received "usual care services." MAIN OUTCOME MEASURES: Functional status as measured by the Functional Independence Measure (FIM) and the Craig Handicap Assessment and Reporting Technique; pain as measured by the Functional Status Instrument; and health care costs including the costs. RESULTS: After the 18-month intervention period, the treatment groups showed significant decline for FIM total score and FIM motor score, but there was significantly more decline for the control group. Functional Status Instrument pain scores increased significantly more for the control group. In a comparison of health care costs, the treatment group expended more than the control group for AT and EIs. The control group required significantly more expenditures for institutional care. There was no significant difference in total in-home personnel costs, although there was a large effect size. The control group had significantly greater expenditures for nurse visits and case manager visits. CONCLUSION: The frail elderly persons in this trial experienced functional decline over time. Results indicate rate of decline can be slowed, and institutional and certain in-home personnel costs reduced through a systematic approach to providing AT and EIs.

Matlabi H, Parker SG, McKee K. The contribution of home-based technology to older people's quality of life in extra care housing. *BMC Geriatrics* 2011;11:68.

Abstract: BACKGROUND: British government policy for older people focuses on a vision of active age-

ing and independent living. In the face of diminishing personal capacities, the use of appropriate home-based technology (HBT) devices could potentially meet a wide range of needs and consequently improve many aspects of older people's quality of life such as physical health, psychosocial well-being, social relationships, and their physical or living environment. This study aimed to examine the use of HBT devices and the correlation between use of such devices and quality of life among older people living in extra-care housing (ECH). **METHODS:** A structured questionnaire was administered for this study. Using purposive sampling 160 older people living in extra-care housing schemes were selected from 23 schemes in England. A face-to-face interview was conducted in each participant's living unit. In order to measure quality of life, the SEIQoL-Adapted and CASP-19 were used. **RESULTS:** Although most basic appliances and emergency call systems were used in the living units, communally provided facilities such as personal computers, washing machines, and assisted bathing equipment in the schemes were not well utilised. Multiple regression analysis adjusted for confounders including age, sex, marital status, living arrangement and mobility use indicated a coefficient of 1.17 with 95% CI (0.05, 2.29) and $p = 0.04$ [SEIQoL-Adapted] and 2.83 with 95% CI (1.17, 4.50) and $p = 0.001$ [CASP-19]. **CONCLUSIONS:** The findings of the present study will be value to those who are developing new form of specialised housing for older people with functional limitations and, in particular, guiding investments in technological aids. The results of the present study also indicate that the home is an essential site for developing residential technologies.

Safran-Norton CE. Physical home environment as a determinant of aging in place for different types of elderly households. *Journal of Housing for the Elderly* 2010 Apr;24(2):208-31.

Abstract: The aim of this research was to investigate the relationship between physical housing features and home modifications to aging in place or precipitating a housing transition among elderly households. Data was taken from two waves (1998 and 2000) of the Health and Retirement Survey. Univariate, bivariate, and multivariate analyses were performed. Residing in a multi-family home without an elevator was a predictor for housing transition for couple households, while residing in a home with small interior modifications was a predictor for remaining in place for single households. Implications for policy makers, health care providers, housing industry and elderly are discussed.

Stark S, Landsbaum A, Palmer JL, Somerville EK, Morris JC. Client-centred home modifications improve daily activity performance of older adults. *Canadian Journal of Occupational Therapy - Revue Canadienne d'Ergotherapie* 2009;76:Spec-45.

Abstract: **BACKGROUND:** Remaining at home is a high priority for many older adults, but the capacity to "age in place" often is threatened by environmental barriers. **PURPOSE:** To describe a client-centred occupational therapy home modification intervention program and examine the impact of the intervention on daily activity performance over time. **METHODS:** Using a competence-environmental press framework, a client-centred home modification program for older adults was implemented. In this quasiexperimental, single group prospective study, participants' subjective ratings of daily activity performance were evaluated before and after the intervention (baseline/post/post). **FINDINGS:** After home modification, participants' perception of their daily activity performance at home improved significantly and was maintained 2 years post-modification. **IMPLICATIONS:** Home modification may benefit older adults attempting to age in place.

Turner S, Arthur G, Lyons RA, Weightman AL, Mann MK, Jones SJ, et al. Modification of the home environment for the reduction of injuries. *Cochrane Database of Systematic Reviews* 2011;(2):CD003600.

Abstract: **BACKGROUND:** Injury in the home is common, accounting for approximately a third of all injuries. The majority of injuries to children under five and people aged 75 and older occur at home. Multifactorial injury prevention interventions have been shown to reduce injuries in the home. However, few studies have focused specifically on the impact of physical adaptations to the home environment and the effectiveness of such interventions needs to be ascertained. **OBJECTIVES:** To determine the effect of modifications to the home environment on the reduction of injuries due to environmental hazards. **SEARCH STRATEGY:** We searched The Cochrane Library, MEDLINE, EMBASE and other specialised databases. We also scanned conference proceedings and reference lists. We contacted the first author of all included randomised controlled trials. The searches were last updated to the end of December 2009, and were not restricted by language or publication status. **SELECTION CRITERIA:** Randomised controlled trials. **DATA COLLECTION AND ANALYSIS:** Two authors screened all abstracts for relevance, outcome and design. Two authors independently assessed methodological quality and extracted data from each eligible study. We performed meta-analysis to combine effect measures, using a random-effects model. We assessed heterogeneity using an I^2 statistic and a Chi^2 test. **MAIN RESULTS:** We found 28 published studies and one unpublished study. Only two studies were sufficiently similar to allow pooling of data for statistical analyses. Studies were divided into three groups; children, older people and the general population/mixed age group. None of the studies focusing on children or older people demonstrated a reduction in injuries that were a direct result of environmental modification in the home. One study in older people demonstrated a reduction in falls and one a reduction in falls and injurious falls that may have been due to hazard reduction. One meta-analysis was performed which examined the effects on falls of multifactorial interventions consisting of home hazard assessment and modification, medication review, health and bone assessment and exercise (RR 1.09, 95% CI 0.97 to 1.23). **AUTHORS' CONCLUSIONS:** There is insufficient evidence to determine whether interventions focused on modifying environmental home hazards reduce injuries. Further interventions to reduce hazards in the home should be evaluated by adequately designed randomised controlled trials measuring injury outcomes. Recruitment of large study samples to measure effect must be a major consideration for future trials. Researchers should also consider using factorial designs to allow the evaluation of individual components of multifactorial interventions.

Thompson PG. Preventing falls in the elderly at home: a community-based program. *Med J Aust* 1996;164(9):530-2.

Abstract: **OBJECTIVE:** To analyse the effectiveness of an ongoing program for reducing the risk of falls in the elderly in their homes. **DESIGN:** Retrospective questionnaire survey of the number of falls in the 12 months before home modifications were installed. Participants were followed up 12 months later to determine the number of falls since home modifications. **SETTING:** Major city, November 1993 to July 1995. **PARTICIPANTS:** Healthy elderly people recruited at presentations made to gatherings of elderly people about the risks of falls in the home. **INTERVENTION:** A free home safety inspection and simple home modifications, such as grab-rails and non-slip floor surfaces, were offered at subsidized prices. **MAIN OUTCOME MEASURES:** Number of falls in the 12 months before and after home modifications. **RESULTS:** Nearly 4000 elderly people agreed to have a home safety inspection and, of these 90%

agreed to have their homes modified. Of the first 305 participants (mean age 74 years) for whom it had been 12 months since modifications 69 (22.6%) had reported having fallen at least once in 12 months before modifications. In the 12 months after modifications, 29 participants (9.5% reported at least one or more falls--a 58% reduction (95% confidence interval [CI], 37%-72%). The total number of falls decreased from 121 to 45--a 63% reduction (95% CI, 50%-73%). There was a significant decrease in falls in the 61-65, 66-70, 71-75 and 81-85 years age groups ($P < 0.05$). CONCLUSIONS: The risk of falling in the elderly can be lowered by more than a half by simple modifications to the home. Behavioural change, as well as environmental change, is important to the success of falls-prevention programs.

Liu SY, Lapane KL. Residential Modifications and Decline in Physical Function among Community-Dwelling Older Adults. *Gerontologist* 2009 Jun;49(3):344-54.

Abstract: Purpose: The purpose of this study is to quantify the effect of residential modification on decreasing risk of physical function decline in 2 years. Design: Cohort study using propensity scores method to control for baseline differences between individuals with residential modifications and those without residential modifications. Participants: Participants ($N = 9,447$) were from the Second Longitudinal Study on Aging, a nationally representative sample of the civilian noninstitutionalized population, aged 70 years and older in the United States at the time of baseline interview in 1994-1995. Methods: Participants self-reported residential modifications at baseline (e.g., railings, bathroom modifications). Decline in physical functioning was measured by comparing self-reported activities of daily living at baseline and at 2-year follow-up. Results: Compared with individuals without baseline modifications, a higher proportion of those with baseline modifications were aged 85 years and older (16% vs. 10%), used special aides (36% vs. 14%), and lived alone (40% vs. 31%). Using a weighted propensity score method, we found a modest decrease in risk of decline at Wave 2 for those with baseline modifications (risk difference = 3.1%). Respondents with a baseline residential modification were less likely to experience subsequent decline in functional ability (adjusted odds ratio = 0.88, 95% confidence interval = 0.79-0.97) after adjusting for quintile of propensity score in a survey-weighted regression model. Implications: Baseline modifications may be associated with reduced risk of decline among a nationally representative sample of older community-dwelling adults. Widespread adoption of residential modifications may reduce the overall population estimates of decline.

Dusing S, Giuliani C. Do home modifications or exercise reduce the incidence of falls in community-dwelling older adults? A meta-analysis of RCTS. *Gerontologist* 2003;43:377-8.

Abstract mangler.

Kochera A (2002): Falls among older persons and the role of the home: An analysis of cost, incidence, and potential savings from home modification. <http://research.aarp.org>

This issue brief reviews the literature on the effectiveness of home modification programs designed to prevent falls, which are a major source of death and injury for older adults. The brief also provides statistics on the cost, cause, and location of falls; explores financial challenges that such programs would need to address if the goal is to reduce the cost of falls; provides guidance for future research on costs and benefits; and illustrates the role of home modifications in efforts to reduce the cost of fall injuries. Research suggests that limited funds might best be applied toward a carefully selected, frail

group of older persons, and that home modification is best viewed as one component of a mixed strategy for fall prevention among older adults.

Brownsell S, Blackburn S, Hawley MS (2008): An evaluation of second and third generation telecare services in older people's housing, *J Telemed Telecare*, 14 (1): 8-12.

In a controlled study of older people living in sheltered housing (retirement housing), 24 people provided with telecare were compared with a control group of 28 people. The intervention consisted of second generation telecare equipment, such as automatic flood or falls detectors, a third generation lifestyle reassurance system and an Internet café. After a 12-month monitoring period, there was no noticeable change in the fear of falling. There was no significant difference for eight of the nine SF-36 domains. However, the Social Functioning domain showed a significant difference ($P = 0.049$), with scores 8% higher in the intervention group, suggesting a beneficial effect of telecare. Positive trends were also evident in areas such as an increase in the length of time spent out of the home, improved feelings of safety during the day and night, and a reduction in the fear of crime. The Internet café was used by 25% of people for at least 20 min per week. The results suggest that second generation telecare systems and Internet facilities could be more widely used in service delivery, but that lifestyle reassurance requires further development.

Blaschke CM, Freddolino PP, Mullen EE. Ageing and Technology: A Review of the Research Literature. *The British Journal of Social Work* 2009 Jun;39(4):641-56.

Abstract: While the ageing of the population around the world raises serious concerns about social security, pensions, long-term care, health care and family systems, digital-age tools have been proposed as possible resources to improve outcomes. Considerable literature has appeared suggesting that Assistive Technologies (ATs) and Information and Communication Technologies (ICTs) may improve quality of life, extend length of community residence, improve physical and mental health status, delay the onset of serious health problems and reduce family and care-giver burden. The goal of this review is to separate the evidence base for these claims from simple optimism about the ultimate value of technology-based tools. This is accomplished through an extensive examination of the empirical research literature in the field of ATs and ICTs as they relate to older adults and ageing populations. In this review, we describe how these technologies are being utilized by older adults and barriers to their use, and we identify what is known-based on scientific studies-about the utility and effectiveness of the technologies. Appropriate social work practice in the digital age requires knowing what tools are available and their documented effectiveness and limitations. This review will thus consider the implications of current research knowledge for social work practice, education and research.

Chase CA, Mann K, Wasek S, Arbesman M. Systematic Review of the Effect of Home Modification and Fall Prevention Programs on Falls and the Performance of Community-Dwelling Older Adults. *Am J Occup Ther* 2012;66(3):284-91.

Abstract: This systematic review explored the impact of fall prevention programs and home modifications on falls and the performance of community-dwelling older adults. It was conducted as part of the American Occupational Therapy Association's Evidence-Based Practice Project. Thirty-three articles were analyzed and synthesized. The strongest results were found for multifactorial programs that included home evaluations and home modifications, physical activity or exercise, education, vision and

medication checks, or assistive technology to prevent falls. Positive outcomes included a decreased rate of functional decline, a decrease in fear of falling, and an increase in physical factors such as balance and strength. The strength of the evidence for physical activity and home modification programs provided individually was moderate. Implications for practice, education, and research are also discussed.

Clemson L, Mackenzie L, Ballinger C, Close JC, Cumming RG. Environmental interventions to prevent falls in community-dwelling older people: a meta-analysis of randomized trials. *J Aging Health* 2008;20(8):954-71.

Abstract: Objective. This study seeks to determine the efficacy of environmental interventions in reducing falls in community-dwelling older people. Method. A systematic review and meta-analysis of randomized trials was performed. Results. Pooled analysis of six trials (N = 3,298) demonstrated a 21% reduction in falls risk (relative risk [RR] = 0.79; 0.65 to 0.97). Heterogeneity was attributable to the large treatment effect of one trial. Analysis of a subgroup of studies with participants at high risk of falls (four trials, n = 570) demonstrated a clinically significant 39% reduction of falls (RR = 0.61; 0.47 to 0.79), an absolute risk difference of 26% for a number needed to treat four people. Discussion. Home assessment interventions that are comprehensive, are well focused, and incorporate an environmental-fit perspective with adequate follow-up can be successful in reducing falls with significant effects. The highest effects are associated with interventions that are conducted with high-risk groups.

Hwang E, Cummings L, Sixsmith A, Sixsmith J. Impacts of Home Modifications on Aging-in-Place. *Journal of Housing for the Elderly* 2011 Jul;25(3):246-57.

Abstract: The purpose of this study is to analyze the relationship between home modifications and aging-in-place. Using the ENABLE-AGE United Kingdom sample (N = 376), the authors hypothesize that seniors who have modified their housing are likely to have stayed longer in their current housing. There is a positive relationship between home modifications and aging-in-place. The results underscore the importance of supportive environment to prolong living in housing settings.

Safran-Norton CE. Relationship of home environment to residential transitions among elders. *Dissertation Abstracts International Section A: Humanities and Social Sciences Vol 69(2-A)*, 2008, pp 710

Abstract: The desire to "age-in-place" among the elderly remains a consistent theme for most people. Although there has been research (Taira and Carlson, 1999) done on designing new housing environments, there has been little to no research done on home modifications for current homes that allow aging in place versus residential transitions. This research explored the physical structures of ones current housing environment as a predictor of a change in housing environment at a later point in time. The influence of functional status at an individual and couple household level was examined and is a unique contribution of the study. The interaction effects of housing features and home modifications with functional limitations were determined. The data used in this study was taken from two waves of the Health and Retirement Survey. The study sample included 6586 original households in 1998 with respondents aged 65 years and older. The dependent variable, housing adjustment, was defined as: (1) No Change in Main Residence, (2) Change in Main Residence, (3) Move into a Nursing Home or (4) Death. Descriptive statistics and multinomial logistic regression analyses were used to determine significant variables associated with housing transitions and the influence of functional status. The de-

scriptive statistics described the couple and single household samples. In general, more couple households remained in place, had a smaller rate of institutionalization into a nursing home and had a smaller rate of death. This may suggest that couple households are more supportive and more stable environments than single households. There were physical housing features and home modifications that had positive effect on "aging in place" among elders in both types of households. The findings for housing features, home modifications and the influence of functional status were different for each type of household, which may suggest different decision making patterns regarding housing transitions. The empirical findings for this research have implications for the housing market, housing development for the elderly, policy makers, families, the long term care and health insurance industries.

Petersson I, Lilja M, Borell L. To feel safe in everyday life at home -- a study of older adults after home modifications. *Ageing & Society* 2012 Jul;32(5):791-811.

Abstract: The aim of this study was to explore aspects contributing to experiences of safety in everyday life for older adults who have received modification services. Qualitative interviews were conducted with eight people. Data were analysed using a comparative approach. Three main categories emanated in the analysis: prerequisites that enable a feeling of safety, strategies that enable safety in everyday life, and use of and reliance on technology impacts on safety. The findings revealed that to feel safe in everyday life was based on three prerequisites: feeling healthy, having someone to rely on and feeling at home. The fulfilment of these prerequisites further impacted on the participants' strategies for handling problems in everyday life but also on the ability to use and benefit from technology such as home modifications. In conclusion, the findings indicated that interventions provided to increase safety for older adults should primarily be focused on the presence and fulfilment of prerequisites and later on other interventions such as technology. Technology such as home modifications and assistive devices was not found in this study to facilitate the feeling of safety unless supported by the fulfilled prerequisites. Implications of these findings for clinical practice are discussed.

Niva B, Skar L. A pilot study of the activity patterns of five elderly persons after a housing adaptation. *Occupational Therapy International* 2006;13(1):21-34.

Abstract: The importance of an accessible home environment for occupational performance has been emphasized in occupational therapy, but knowledge about how accessibility can affect a person's activity patterns is limited. The purpose of this study was to describe the activity patterns of five elderly persons aged between 70 and 84 years and their views about accessibility and usability of their homes before and after a housing adaptation. Two different questionnaires, 'Accessibility in My Home' and the 'Occupational Questionnaire' were used for data collection. Adaptations in the home included: removing thresholds, installing new taps in the bathroom and kitchen and broadening doorways. After the adaptations the five participants reported that they increased their outside activities, reduced naps during the day and slept better at night. The results showed that the participants performed more and new activities when their home environment had become accessible. Activities performed were also perceived as more important after the housing adaptation. There is a need to replicate the study with a larger sample. Further research is needed on the impact of home adaptations on the activity patterns of elderly people.

Danziger S, Chaudhury H. Older adults' use of adaptable design features in housing units: an exploratory study. *Journal of Housing for the Elderly* 2009 Jul;23(3):134-48.

Abstract: In 1997, the city of North Vancouver, British Columbia developed Adaptable Design Guidelines for housing to support aging-in-place for older tenants. This article reports the first qualitative evaluation of those adaptable design features since those guidelines were implemented. The study used a qualitative methodology to explore the elderly tenants' use and satisfaction of the adaptable design features in the housing units and environmental changes made by those tenants. Key qualitative categories that emerged from the interviews were design preferences and environmental modifications. Findings from this study can inform future revisions of the guidelines and demonstrate what needs to be done in environmental design of seniors' housing that can foster functional independence.

Tse T. The environment and falls prevention: do environmental modifications make a difference? *Australian Occupational Therapy Journal* 2005;52(4):271-81.

Abstract: XST: This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn

XAO: To evaluate the published evidence related to falls prevention and environmental modification for older people

XSI: Studies evaluating environmental modification strategies for falls prevention were eligible for inclusion. Among the strategies used in the included studies were: bed alarms; carpeted or vinyl flooring; slipper socks at night; individualised safety assessment and treatment; post-fall assessment including environmental assessment, and recommendations given to physician; relevant staff and patient education; geriatric assessment with or without home hazard management; oral presentation on falls prevention, exercise, home assessment and modification, and medical assessment; home assessment and modification; encouragement to remove or modify hazard, education, exercise and vision correction; and home visits to assess and act on medical, functional, psychosocial problems and a safety inspection. Where applicable, interventions were compared with each other or with no treatment or usual care control groups

XPA: Studies of older people with or without a history of falls were included in the review. The included studies assessed participants in an institutional setting (residential and hospital-care settings) or in a community setting (people living in their own home)

XOA: The outcomes included in the review were change in the risk of falls or injuries and prevalence of an environmental modification

XSD: Case-control studies, randomised controlled trials (RCTs), longitudinal studies and reviews were eligible for inclusion in the review

XSS: The Cochrane Database of Systematic Reviews, AgeLine (1994 to 2004), CINAHL (1994 to 2004) and MEDLINE (1994 to 2004) were searched. The author also searched the reference lists of articles. The search terms were stated

XVC: Validity was assessed on the basis of allocation concealment, blinding of the outcome assessors, comparability of the participants at baseline, blinding of the participants, definition of outcome measures and study duration. The author did not state how the validity assessment was performed

XDC: The author did not state how the papers were selected for the review, or how many reviewers performed the selection

XDE: The author did not state how the data were extracted for the review, or how many reviewers performed the data extraction

XCS: The studies were combined in a narrative, grouped according to whether they were conducted in an institutional or a community setting

XDS: Differences between the studies were displayed in the tables and discussed in the text

XRR: Eighteen studies (n=10,634) were included in the review: 14 RCTs (n=9,241), one RCT with a 2x2 factorial design (n=54), one multifactorial RCT (n=1,090), one longitudinal study (n=225) and one clinical case study (n=24). Fourteen studies used allocation concealment (randomisation method described), two were randomised but not described, and two did not support concealment. The outcome assessors were blinded in only 7 studies, while the participants were blinded in one. The participants were clearly comparable at baseline in 12 studies. The outcome measures were defined in all but 2 studies. Institutional settings (7 studies). Three studies reported a reduction in the number of falls, fallers or recurrent fallers, while 3 studies found no significant effect on the number of falls. One study reported more injurious falls on vinyl than on carpet, but the data were unclear. Four studies reported no effect of the intervention on injury, one study found an unclear effect on injury, and one did not report the effects on injury. Community settings (11 studies). Six studies reported a significant positive effect of the intervention on falls or the risk of falls, while 5 studies reported no significant effect on falls. Six studies reported no significant effect of the intervention on injury, 2 studies did not measure the effects on injury, and 3 studies did not report the effects of the interventions on injury. One study reported a significant effect of the intervention on home hazards

XCL: There is some evidence to support the use of environmental modification strategies for the prevention of falls in older people, in particular, the use of multidisciplinary or multifactorial programmes in individuals with a history of falls. Further research is needed to inform occupational therapy practice for preventing falls and injuries

XCM: The author set out a clear objective at the beginning of the review and inclusion criteria were defined for the interventions, participants, outcomes and study design. Appropriate sources were searched; however, it was unclear whether the search was restricted by language or publication status. The author does not appear to have taken any measures to minimise bias in the study selection, validity assessment or data extraction processes. Appropriate details of each of the included studies were presented, and quality was assessed using appropriate criteria. The narrative synthesis of the studies seems appropriate given the differences in the interventions used in each of the included studies. The author's cautious conclusions seem appropriate for the evidence presented; the possibility of bias in the review methods should, however, be noted

XIM: Practice: The author stated that intervention strategies should be person-focused and environmental modifications should be tailored to the individual, and should occur with their consent. A multidisciplinary team assessment that builds on multifactorial intervention approaches, including environmental modifications, is the most beneficial in all settings. Research: The author stated that research should focus on appropriate environmental assessment tools, flooring, ways of improving compliance and uptake of recommendations, and should determine which behavioural interventions are effective.

Tittel sortert etter type studiedesign

1. Oversiktsartikler

Systematiske oversikter

Chase CA, Mann, K, Wasek, S, Arbesman, M (2012): Systematic Review of the Effect of Home Modification and Fall Prevention Programs on Falls and the Performance of Community-Dwelling Older Adults. *Am J Occup Ther*, 66(3):284-91.

Tse T (2005): The environment and falls prevention: do environmental modifications make a difference? *Australian Occupational Therapy Journal*, 52(4):271-81.

Turner S, Arthur, G, Lyons RA, Weightman, A.L., Mann, M.K., Jones, S.J., et al. (2011): Modification of the home environment for the reduction of injuries. *Cochrane Database of Systematic Reviews*, 2:CD003600.

Meta-analyse av RCT-studier

Dusing S, Giuliani C. (2003): Do home modifications or exercise reduce the incidence of falls in community-dwelling older adults? A meta-analysis of RCTS. *Gerontologist*, 43:377-8.

Clemson L, Mackenzie L, Ballinger C, Close JC, Cumming RG. (2008): Environmental interventions to prevent falls in community-dwelling older people: a meta-analysis of randomized trials. *J Aging Health*, 20(8):954-71.

Ikke-systematiske oversikter

Barnes S (2002): The Design of Caring Environments and the Quality of Life of Older People. *Ageing and Society*, 22(6):775-89.

Blaschke CM, Freddolino, P.P., Mullen, E.E. (2009): Ageing and Technology: A Review of the Research Literature. *The British Journal of Social Work*, 39(4):641-56.

Kochera A (2002): Falls among older persons and the role of the home: An analysis of cost, incidence, and potential savings from home modification. <http://research.aarp.org>

2. Eksperimenter

Randomiserte kontrollerte studier (RCT)

Mann WC, Ottenbacher KJ, Fraas L, Tomita M, Granger CV. (1999): Effectiveness of assistive technology and environmental interventions in maintaining independence and reducing home care costs for the frail elderly. A randomized controlled trial. Arch Fam Med, 8(3):210-7.

Stevens M, Holman CD, Bennett N, de KN. (2001): Preventing falls in older people: outcome evaluation of a randomized controlled trial. J Am Geriatr Soc, 49(11):1448-55.

Kvasiek eksperimenter

Stark S, Landsbaum A, Palmer JL, Somerville EK, Morris JC. (2009): Client-centred home modifications improve daily activity performance of older adults. Canadian Journal of Occupational Therapy - Revue Canadienne d'Ergotherapie, 76:Spec-45.

Tang JW, Brown RD. (2005): The Effect of Viewing a Landscape on Physiological Health of Elderly Women. Journal of Housing for the Elderly, 19(3-4):187-202.

Brownsell S, Blackburn S, Hawley MS (2008): An evaluation of second and third generation telecare services in older people's housing, J Telemed Telecare, 14 (1): 8-12.

3. Longitudinelle studier

Carp FM. (1976): User evaluation of housing for the elderly. The Gerontologist, 16(2):102-111.

Lawton MP, Cohen J. (1974): The generality of housing impact on the well-being of older people. Journal of Gerontology, 29(2):194-204.

Lawton PM. (1976): The Relative Impact of Congregate and Traditional Housing on Elderly Tenants. Gerontology, 16(3):237-242.

Safran-Norton CE. (2010): Physical home environment as a determinant of aging in place for different types of elderly households. Journal of Housing for the Elderly, 24(2):208-31.

Safran-Norton CE. (2008): Relationship of home environment to residential transitions among elders. Dissertation Abstracts International Section A: Humanities and Social Sciences Vol 69(2-A), pp 710.

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6. Tverrsnittstudier

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Vedlegg 1

Søkestrategier

**Database: Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations and Ovid
MEDLINE(R) 1946 to Present**

Dato: 07.12.2012

Antall treff: 1962

- 1 Aged/
- 2 "Aged, 80 and over"/
- 3 Retirement/
- 4 ((elder* or senior* or senium* or aged or olde* or geriatr*) adj3 (patient\$ or population\$ or person\$ or people or adult\$)).tw.
- 5 or/1-4
- 6 housing/
- 7 architectural accessibility/
- 8 "elevators and escalators"/
- 9 "floors and floorcoverings"/
- 10 "interior design and furnishings"/
- 11 parking facilities/
- 12 Independent living/
- 13 City Planning/
- 14 environment design/
- 15 urban renewal/
- 16 "facility design and construction"/
- 17 ((resort or gated) adj2 communit*).tw.

- 18 (Home adj4 (environment* adj2 intervention*)).tw.
- 19 (Home adj2 modificati*).tw.
- 20 assistive technolog*.tw.
- 21 (Continuing adj4 retirement communities).tw.
- 22 cohousing.tw.
- 23 ("aging in place" or "age in place").tw.
- 24 (Retirement adj2 (facilit* or village*)).tw.
- 25 (age adj2 (integrated or segregated) adj2 housing).tw.
- 26 or/6-25
- 27 5 and 26
- 28 housing for the elderly/
- 29 27 or 28
- 30 (editorial or comment or letter).pt.
- 31 Animals/ not (Animals/ and Humans/)
- 32 30 or 31
- 33 29 not 32
- 34 "Review Literature as Topic" /
- 35 "review" /
- 36 exp guideline /
- 37 exp study characteristics /
- 38 exp epidemiologic study characteristics as topic /
- 39 or/34-38
- 40 33 and 39

Database: Cochrane Database of Systematic Reviews Issue 11 of 12 Nov 2012, Cochrane Central Register of Controlled Trials (Central) Search for trials Issue 11 of 12 Nov 2012, Other Reviews (DARE) Issue 4 of 4 Oct 2012, Methods Studies Issue 4 of 4 Oct 2012, Technology Assessments Issue 4 of 4 Oct 2012, Economic Evaluations [versjon ikke oppgitt].

Dato: 07.12.2012

Antall treff: 165 (Cochrane Reviews: 11, Other Reviews: 8, Trials: 135, Methods Studies: 1, Technology Assessments: 0, Economic Evaluations: 10)

- #1 MeSH descriptor: [Aged] this term only
- #2 MeSH descriptor: [Aged, 80 and over] this term only
- #3 MeSH descriptor: [Retirement] this term only
- #4 ((elder* or senior* or senium* or aged or olde* or geriatr*) near/3 (patient* or population* or person* or people or adult*))
- #5 #1 or #2 or #3 or #4
- #6 MeSH descriptor: [Housing] this term only
- #7 MeSH descriptor: [Architectural Accessibility] this term only
- #8 MeSH descriptor: [Elevators and Escalators] this term only
- #9 MeSH descriptor: [Floors and Floorcoverings] explode all trees
- #10 MeSH descriptor: [Interior Design and Furnishings] this term only
- #11 MeSH descriptor: [Parking Facilities] this term only
- #12 MeSH descriptor: [Independent Living] this term only
- #13 MeSH descriptor: [City Planning] this term only
- #14 MeSH descriptor: [Environment Design] this term only
- #15 MeSH descriptor: [Urban Renewal] this term only
- #16 MeSH descriptor: [Facility Design and Construction] this term only
- #17 ((resort or gated) near/2 communit*):ti,ab,kw
- #18 (home near/4 (environment* near/2 intervention*)):ti,ab,kw
- #19 (Home near/2 modificati*):ti,ab,kw
- #20 (assistive next technolog*):ti,ab,kw
- #21 (Continuing near/4 (retirement next communities)):ti,ab,kw
- #22 cohousing:ti,ab,kw
- #23 ("aging in place" or "age in place"):ti,ab,kw
- #24 (Retirement near/2 (facilit* or village*)):ti,ab,kw
- #25 (age near/2 (integrated or segregated) near/2 housing):ti,ab,kw
- #26 #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or #18 or #19 or #20
or #21 or #22 or #23 or #24 or #25
- #27 #5 and #26
- #28 MeSH descriptor: [Housing for the Elderly] explode all trees
- #29 #27 or #28

Database: DARE via CRD

Dato: 07.12.2012

Antall treff: 35

Line	Search
1	MeSH DESCRIPTOR Aged
2	MeSH DESCRIPTOR Aged, 80 and over
3	MeSH DESCRIPTOR Retirement
4	((elder* or senior* or senium* or aged or olde* or geriatr*) NEAR3 (patient* or population* or person* or people or adult*))
5	#1 OR #2 OR #3 OR #4
6	MeSH DESCRIPTOR Housing
7	MeSH DESCRIPTOR Architectural Accessibility
8	MeSH DESCRIPTOR Elevators and Escalators
9	MeSH DESCRIPTOR Floors and Floorcoverings
10	MeSH DESCRIPTOR Interior Design and Furnishings
11	MeSH DESCRIPTOR Parking Facilities
12	MeSH DESCRIPTOR Independent Living
13	MeSH DESCRIPTOR City Planning
14	MeSH DESCRIPTOR Environment Design
15	MeSH DESCRIPTOR Urban Renewal
16	MeSH DESCRIPTOR Facility Design and Construction
17	((resort or gated) NEAR2 communit*)
18	(home NEAR4 (environment* NEAR2 intervention*))
19	(home NEAR2 modificati*)
20	(assistive technolog*)
21	(Continuing NEAR4 (retirement communities))
46	

- 22 cohousing
- 23 aging in place
- 24 age in place
- 25 (Retirement NEAR2 (facilit* or village*))
- 26 (age NEAR2 (integrated or segregated) NEAR2 housing)
- 27 #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17
OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26
- 28 #5 AND #27
- 29 MeSH DESCRIPTOR Housing for the Elderly
- 30 #28 OR #29
- 31 (#30) IN DARE

Database: PsycINFO
Dato: 10.12.2012
Antall treff: 763

Searches

- 1 exp aging/
- 2 ("380" or "390").ag.
- 3 Retirement/
- 4 ((elder* or senior* or senium* or aged or olde* or geriatr*) adj3 (patient\$ or population\$ or person\$ or people or adult\$)).tw.
- 5 or/1-4
- 6 housing/
- 7 retirement communities/
- 8 built environment/
- 9 group homes/
- 10 assistive technology/
- 11 interior design/
- 12 environmental planning/

- 13 aging in place/
- 14 home environment/
- 15 urban planning/
- 16 ((resort or gated) adj2 communit*).tw.
- 17 (Home adj4 (environment* adj2 intervention*)).tw.
- 18 (Home adj2 modificati*).tw.
- 19 assistive technolog*.tw.
- 20 (Continuing adj4 retirement communities).tw.
- 21 cohousing.tw.
- 22 ("aging in place" or "age in place").tw.
- 23 (Retirement adj2 (facilit* or village*)).tw.
- 24 (age adj2 (integrated or segregated) adj2 housing).tw.
- 25 or/6-24
- 26 5 and 6
- 27 ("comment/reply" or Editorial or Letter or Obituary).dt.
- 28 26 not 27

Database: Cinahl via EBSCOhost

Dato: 10.12.2012

Antall treff: 718

Kommentar: Medline-referanser ekskludert (ekskluderer referanser med PMID-nummer)

Query

S1 (MH "Aged")

S2 (MH "Aged, 80 and Over")

S3 (MH "Retirement")

S4 TI (((elder* or senior* or senium* or aged or olde* or geriatr*) N3 (patient* or population* or person* or people or adult*))) OR AB (((elder* or senior* or senium* or aged or olde* or geriatr*) N3 (patient* or population* or person* or people or adult*)))

S5 S1 OR S2 OR S3 OR S4

- S6 (MH "Housing")
- S7 (MH "Architectural Accessibility")
- S8 (MH "Floors and Floorcoverings")
- S9 (MH "Interior Design and Furnishings+")
- S10 (MH "Facility Design and Construction")
- S11 TI (((resort or gated) N2 communit*)) OR AB (((resort or gated) N2 communit*))
- S12 TI (Home N4 (environment* N2 intervention*)) OR AB (Home N4 (environment* N2 intervention*))
- S13 TI (Home N2 modificati*) OR AB (Home N2 modificati*)
- S14 TI assistive technolog* OR AB assistive technolog*
- S15 TI (Continuing N4 retirement communities) OR AB (Continuing N4 retirement communities)
- S16 TI cohousing OR AB cohousing
- S17 TI (("aging in place" or "age in place")) OR AB (("aging in place" or "age in place"))
- S18 TI ((Retirement N2 (facilit* or village*))) OR AB ((Retirement N2 (facilit* or vil- lage*))))
- S19 TI ((age N2 (integrated or segregated) N2 housing)) OR AB ((age N2 (integrated or segregated) N2 housing)))
- S20 S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19
- S21 S5 AND S20
- S22 (MH "Housing for the Elderly")
- S23 S21 OR S22
- S24 PT commentary OR PT letter OR PT editorial
- S25 S23 NOT S24
- S26 (MH "Literature Review+")
- S27 (MH "Practice Guidelines")

S28 (MH "Research+")

PT (Book or book chapter or book review or case study or clinical innovations or

S29 clinical trial or corrected article or doctoral dissertation or masters thesis or meta analysis or randomized controlled trial or research or review or systematic review)

S30 S26 OR S27 OR S28 OR S29

S31 S25 AND S30

S25 AND S30

S32 Limiters - Exclude MEDLINE records

Database: ERIC via ProQuest

Dato: 11.12.2012

Antall treff: 644

((SU.EXACT("Older Adults")) OR (SU.EXACT("Retirement")) OR (SU.EXACT("Aging (Individuals)")) OR ((elder* or senior* or senium* or aged or olde* or geriatr*) NEAR/3 (patient? or population? or person? or people or adult?))) AND ((SU.EXACT("Housing") OR SU.EXACT("Building Design") OR SU.EXACT("Interior Design") OR SU.EXACT("Independent Living") OR SU.EXACT("Urban Planning") OR SU.EXACT("Physical Environment") OR SU.EXACT("Interior Space") OR all((((resort or gated) NEAR/2 communit*) OR (Home NEAR/4 (environment* NEAR/2 intervention*))) OR all(((Home NEAR/2 modificati*) OR (assistive technolog*) OR cohousing)) OR all(((Continuing NEAR/4 retirement communities) OR (Retirement NEAR/2 (facilit* or village*)) OR (age NEAR/2 (integrated or segregated) NEAR/2 housing) OR ("aging in place" OR "age in place")))))

Database: BIBSYS

Dato: 17.12.2012

Antall treff: 636

emne = Aged? eller emne = Elderly eller emne = Older eller emne = Retirement eller utvalgte felt = elder? eller senior? eller senium? eller aged eller olde? eller geriatr? eller utvalgte felt = eldre eller gamle eller gammel eller gammal og emne = housing eller emne = architectural accessibility eller emne = elevators and escalators eller emne = floors and floorcoverings eller emne = interior design and furnishings eller emne = parking facilities eller emne = Independent living eller emne = City Planning eller emne = environment design eller emne = urban renewal eller emne = facility design and construction eller utvalgte felt = communit? eller utvalgte felt = home? eller utvalgte felt = assistive technolog? eller utvalgte felt = cohousing eller utvalgte felt = housing eller utvalgte felt = bolig? eller boløsninger? eller hjem?

Database: Campbell Library

Dato: 17.12.2012

Antall treff: 126

(elder* OR olde* OR senior or retire*) AND (housing OR home OR interior OR environment* OR "independent living" OR "assistive technolog*" OR communit*)

Database: ISI Science/Social Science Citation Index

Dato: 17.12.2012

Antall treff: 311

TI=((elder* OR senior* OR senium* OR aged OR olde* OR geriatr*) NEAR/2 (patient* OR population* OR person* OR people OR adult*)) AND TI=(housing OR ((resort or gated) NEAR/2 communit*) OR (home NEAR/2 intervention*) OR (home NEAR/2 modificati*) OR "assistive technolog*" OR (continuing retirement communit*) OR cohousing OR "aging in place" OR "age in place" OR (retirement NEAR/2 (facilit* OR village*)) OR (age NEAR/2 (integrated OR segregated) NEAR/2 housing))

Database: Google Scholar

Dato: 17.12.2012

Antall treff: Totalt: 1,160,000 – de første 200 er tatt med.

((retirement OR aged OR elderly OR senior OR older) AND (housing OR "Independent living" OR "home environment" OR "home modification" OR "assistive technology" OR cohousing OR "aging in place" OR "age in place"))

Database: OpenGray (tidl. OpenSigle)

Dato: 12.12.2012

Antall treff: 308

((retirement OR aged OR elderly OR senior OR older) AND (discipline:(05U) OR housing OR (Independent NEAR/2 living) OR (home NEAR/2 environment) OR (home NEAR/2 modification) OR (assistive NEAR/2 technolog*) OR cohousing OR "aging in place" OR "age in place"))

Database: SSRN – Social Science Research Network e-library

Dato: 12.12.2012

Antall treff: 112

Title, Abstract, Abstract ID or Keywords: elderly housing

Database: Social Services Abstracts

Dato: 11.12.2012

Antall treff: 643

SU.EXACT("Elderly") OR SU.EXACT("Aging") OR SU.EXACT("Retirement") OR (((elder* or senior* or senium* or aged or olde* or geriatr*) NEAR/3 (patient? or population? or person? or people or adult?))) AND ((SU.EXACT("Housing")) OR (SU.EXACT("Independent Living")) OR (SU.EXACT("City Planning")) OR (SU.EXACT("Environmental Design")) OR (SU.EXACT("Urban Renewal")) OR (SU.EXACT("Neighborhood Change")) OR (SU.EXACT("Built Environment"))) OR all((((resort or gated) NEAR/2 communit*) OR (Home NEAR/4 (environment* NEAR/2 intervention*) OR (Home NEAR/2 modificati*) OR (assistive technolog*) OR cohousing) OR (Continuing NEAR/4 retirement communities) OR (Retirement NEAR/2 (facilit* or village*) OR (age NEAR/2 (integrated or segregated) NEAR/2 housing) OR ("aging in place" OR "age in place"))))

Database: Social Care Online

Dato: 11.12.2012

Antall treff: 693

((topic="older people" AND topic="housing") and publicationdate<1995)
((topic="older people" AND topic="housing") and publicationdate=1995)
((topic="older people" AND topic="housing") and publicationdate>1995 and publicationdate<1999)
((topic="older people" AND topic="housing") and publicationdate=1999)
((topic="older people" AND topic="housing") and publicationdate>1999 and publicationdate<2001)
((topic="older people" AND topic="housing") and publicationdate=2001)
((topic="older people" AND topic="housing") and publicationdate>2001 and publicationdate<2003)
((topic="older people" AND topic="housing") and publicationdate=2003)
((topic="older people" AND topic="housing") and publicationdate>2003 and publicationdate<2005)
((topic="older people" AND topic="housing") and publicationdate=2005)
((topic="older people" AND topic="housing") and publicationdate>2005 and publicationdate<2007)
((topic="older people" AND topic="housing") and publicationdate=2007)
((topic="older people" AND topic="housing") and publicationdate>2007 and publicationdate<2009)
((topic="older people" AND topic="housing") and publicationdate=2009)

((topic="older people" AND topic="housing") and publicationdate>2009 and publicationdate<2012)

((topic="older people" AND topic="housing") and publicationdate=2012)

Database: **Sociological Abstracts**

Dato: 11.12.2012

Antall treff: 718

(SU.EXACT("Elderly") OR SU.EXACT("Aging") OR SU.EXACT("Retirement") OR all((((elder* or senior* or senium* or aged or olde* or geriatr*) NEAR/3 (patient? or population? or person? or people or adult?)))) AND (all((((SU.EXACT("Housing")) OR (SU.EXACT("Independent Living")) OR (SU.EXACT("City Planning")) OR (SU.EXACT("Environmental Design")) OR (SU.EXACT("Urban Renewal")) OR (SU.EXACT("Neighborhood Change")) OR (SU.EXACT("Built Environment")))) OR all((((resort or gated) NEAR/2 communit*) OR (Home NEAR/4 (environment* NEAR/2 intervention*) OR (Home NEAR/2 modificati*) OR (assistive technolog*) OR cohousing) OR (Continuing NEAR/4 retirement communities) OR (Retirement NEAR/2 (facilit* or village*) OR (age NEAR/2 (integrated or segregated) NEAR/2 housing) OR ("aging in place" OR "age in place"))))

Database: **HUD User Database**

Dato: 11.12.2012

Antall treff: 518

Search by keyword: elderly housing

Database: **Google**

Dato: 14.01.2013

Antall treff: De 100 første av 187 000 000 treff

Søkeord: research housing senior OR elderly

Vedlegg 2

Inkluderte referanser

- Altus DE, Xaverius PK, Mathews RM, Kosloski KD. (2002): Evaluating the impact of elder cottage housing on residents and their hosts. *Journal of Clinical Geropsychology*, 8(2):117-137.
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