

Appendix 3. Studies included in the behaviour change review. Adapted within permission from Gardner *et al* (2017) Specifying the content of home-based health behaviour change interventions for older people with frailty or at risk of frailty: an exploratory systematic review. *BMJ Open*. 2017;7(2):e014127⁵¹

Study	Population (N at baseline, brief descriptor)	Behaviours targeted	Intervention function	Intervention and theoretical basis	BCTs	Outcomes
Avlund <i>et al.</i> (2002) ^{50,66} Denmark RCT	149 adults aged 60+ on geriatric wards or 70+ on medical wards, requiring ongoing treatment and home services	Dietary consumption Medication use Physical activity	Enablement Persuasion	1. Health assessment and tailored plan delivered by home nurse, home helper, PT, OT (personalised) 2. Usual care No theory reported	Monitoring of outcomes by others without feedback Social support from intervention provider (practical) Social support from intervention provider (unspecified)	Health and social care use Physical functioning
Boult <i>et al.</i> (2013) ^{42,67} USA Cluster RCT	904 adults aged 65+ at high risk of generating high healthcare expenditure in the next year	Physical activity Diet Sleeping Medication use Smoking Alcohol consumption	Enablement Persuasion	1. Care, transitional care and self-management support by a nurse within primary care and family caregiving 2. Usual care Theory: Transtheoretical Model	Discrepancy between current behaviour and goal Monitoring behaviour without feedback Self-monitoring (outcome) Social support from intervention provider (practical) Social support from intervention provider (unspecified)	Health and social care use Physical functioning Generic health and wellbeing
Bouman <i>et al.</i> (2008) ^{51,68} Netherlands RCT	330 adults aged 60-84 years	Dietary consumption Physical activity	Enablement	1. Health, problems and risk assessment, advice provision, referral to other services by home nurses 2. Usual care No theory reported	Goal setting (outcome) Monitoring of outcomes by others without feedback Review behavioural goals Social support from intervention provider (unspecified)	Physical functioning Social functioning and wellbeing Generic health and wellbeing
Dalby <i>et al.</i> (2000) ⁵²	142 adults aged 70+ with functional	Medication adherence	Enablement	1. Health, wellbeing, problems and risk	Monitoring of behaviour by others without feedback	Behavioural Health and

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Canada RCT	impairment, hospital admission or bereavement in previous 6months	Vaccinations		assessment, personalised care plan by primary care nurse 2. Usual care No theory reported	Monitoring of outcomes of behaviour by others without feedback Social support from friends/family/caregivers (unspecified) Social support from intervention provider (practical) Social support from intervention provider (unspecified)	social care use Generic health and wellbeing
Favela <i>et al.</i> (2013) ⁵³ Mexico RCT	127 adults aged 70-90 years eligible for national insurance	Physical activity Medication adherence	Enablement Training	1. Health assessment, health improvement plan by nurse, alert button for emergency care 2. Health assessment, health improvement plan by nurse 3. Usual care No theory reported	Action planning Adding objects to the environment (1 st intervention only) Goal setting (outcome) Graded tasks Instruction on how to perform behaviour Monitoring of behaviour by others without feedback Review outcome goals Social support from friends/family/caregivers (unspecified) Social support from intervention provider (practical)	Physical functioning

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Gustafsson <i>et al.</i> (2012) <small>10,69–72</small> Sweden RCT	459 adults aged 80+ years	Physical activity Medication use Diet	Education Enablement	1. Home visits with advice on available support services by OT/PT/nurse/social worker 2. Senior meetings: Multidisciplinary discussions, advice on available support services by OT/PT/nurse/social worker 3. Usual care No theory reported	Information on health consequences (2 nd intervention only) Instruction on how to perform behaviour, restructuring physical environment, social support from intervention provider (practical)	Physical functioning Generic health and wellbeing
Hall <i>et al.</i> (1992) Canada RCT	162 adults aged 65+, newly admitted to receive personal home care	Dietary consumption Medication over-use Physical activity Smoking	Enablement	1. Standard personal care at home, personal health plan by nurse 2. Standard personal care at home No theory reported	Goal setting (outcome) Monitoring of outcome of behaviour by others without feedback Review outcome goals Social support from intervention provider (emotional) Social support from intervention provider (unspecified)	Health and social care use Generic health and wellbeing
Kono <i>et al.</i> (2011) ^{9,73} Japan RCT	323 adults aged 65+ years, requiring long term care services	Physical activity	None identified	1. Health and psychosocial assessment, personalised recommendations by community health nurse, care manager or social worker	Monitoring of behaviour by others without feedback Monitoring of outcomes by others without feedback Social support from family/friends/caregiver (unspecified)	Physical functioning Health and social care use Mental health and functioning Social

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				2. Usual care No theory reported	Social support from intervention provider (practical)	functioning and wellbeing Generic health and wellbeing
Levine <i>et al.</i> (2012) ⁵⁵ USA RCT	298 adults who are frail and at high risk for medical service use	Medication adherence	Education Enablement	1. Health assessment, health education, disease management advice, care planning by physician, nurse practitioner, nurse care manager and social worker 2. Usual care No theory reported	Monitoring of outcomes by others without feedback Social support from intervention provider (practical) Social support from intervention provider (unspecified)	Health and social care use
Luck <i>et al.</i> (2013) ^{56,74} Germany RCT	305 adults aged 80+ years with impairment in 3 ADLs	Taking nutritional supplements	Education Enablement Environmental restructuring	1. Falls risk assessment, personalised counselling by psychologist, sociologist or nurse scientist 2. No treatment No theory reported	Adding objects to the environment Feedback on behaviour Monitoring of behaviour by others without feedback Restructuring the physical environment Social support from intervention provider (unspecified)	Physical functioning
Marek <i>et al.</i> (2013) ^{57,75} USA RCT	414 adults aged 60+ with impaired medication management/cognitive function (able to follow directions with prompting)	Medication adherence	Enablement Environmental restructuring	1. Medication-dispensing machine delivered by nurse 2. Medication planner delivered by nurse 3. No treatment	Adding objects to the environment Feedback on behaviour Goal setting (outcome) Prompts/cues Social support from intervention provider (practical)	Mental health and functioning Physical functioning Generic health and wellbeing

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				Theory: Individual and Family Self-Management theory		
Markle-Reid <i>et al.</i> (2006) ⁵⁸ Canada RCT	288 adults aged 75+ years, newly referred to and eligible for community care personal support services	Medication management	Education Enablement Training	1. Health assessment, health education, community service coordination, empowerment strategies delivered by nurse 2. Usual home care Theory: Model of Vulnerability	Goal-setting (outcome) Information on health consequences Monitoring of outcomes by others without feedback Social support from intervention provider (practical) Social support from intervention provider (unspecified)	Mental health and functioning Physical functioning Social functioning and wellbeing
Markle-Reid <i>et al.</i> (2010) ⁵⁹ Canada RCT	99 adults aged 75+ years, newly referred to and eligible for community care personal support services, falls risk	Medication adherence Physical activity	Education Enablement Training	1. Usual home care, multidisciplinary team visit for health assessment, falls prevention advice delivered by CCAC case manager, registered nurse, occupational therapist, physiotherapist, and registered dietitian 2. Usual home care No theory reported	Goal setting (outcome) Monitoring of outcomes by others without feedback Problem solving Restructuring the physical environment Social support from intervention provider (emotional) Social support from intervention provider (unspecified)	Behavioural Health and social care use Mental health and functioning Physical functioning Social functioning and wellbeing
Melis <i>et al.</i> (2008) ^{65,76} Netherlands Pseudo-	151 adults aged 70+years, with recent presentation of and seeking help for	Dietary consumption	None identified	1. Health assessment, treatment plan by geriatric specialist nurse 2. Usual care	Goal setting (outcome) Monitoring of outcomes of behaviour by others without feedback	Mental health and functioning Physical functioning

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cluster RCT	cognitive disorder, dementia, mobility disorder, falls or malnutrition			No theory reported	Social support from intervention provider (unspecified)	Social functioning and wellbeing
Metzelthin <i>et al.</i> (2013) ^{64,77} Netherlands Cluster RCT	146 adults aged 70+years	Physical activity	Enablement Environmental restructuring	1. Frailty assessment, personalised treatment plan by practice nurse 2. Usual care No theory reported	Adding objects to the environment Feedback on outcomes of behaviour Goal setting (outcome) Monitoring of outcomes of behaviour by others without feedback Restructuring physical environment Social support from intervention provider (emotional) Social support from intervention provider (unspecified)	Mental health and functioning Physical functioning Social functioning and wellbeing
Siu <i>et al.</i> (1996) ⁶⁰ USA RCT	354 adults aged 65+ years, recent hospitalisation with unstable medical problems, functional limitations or potentially reversible geriatric clinical problems	Medication adherence	None identified	1. Health assessment (inpatient), follow up home visit by nurse, recommendations to physician 2. Usual care No theory reported	Monitoring of outcomes of behaviour without feedback Social support from intervention provider (unspecified)	Behavioural Health and social care use Mental health and functioning Physical functioning Social functioning and wellbeing Generic health and wellbeing

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Stuck <i>et al.</i> (2000) ⁶¹ Switzerland Stratified RCT	444 adults aged 75+ on health insurance list	Self-care	Education Enablement	1. Health assessments, treatment plan by public health nurse 2. Unclear No theory reported	Monitoring of outcomes of behaviour without feedback Social support from intervention provider (unspecified)	Behavioural Health and social care use Mental health and functioning Physical functioning Generic health and wellbeing
van Hout <i>et al.</i> (2010) ⁶² Netherlands RCT	651 adults aged 75+	Medication adherence	None identified	1. Care needs assessment, tailored care plan, telephone monitoring by community nurse 2. Varied (none to regular physician home visits) No theory reported	Monitoring of outcomes by others without feedback Social support from intervention provider (unspecified)	Health and social care use Mental health and functioning Physical functioning Generic health and wellbeing
Williams <i>et al.</i> (1992) ⁶³ UK RCT	457 adults aged 75+ discharged from hospital in previous year	Dietary consumption Medication use Sleeping	None identified	1. Health and care needs assessment, provision of advice by health visitor assistants 2. No home visits (unless required) No theory reported	Monitoring of outcomes of behaviour by others without feedback	Health and social care use Mental health and functioning Physical functioning