

Supplemental Table 1. Selected Evidence for the Effects of Occupation- and Activity-Based Interventions on IADL Performance Among Community-Dwelling Older Adults (N = 13)

Author	Study Objectives	Level/Design/Participants	Intervention and Outcome Measures		Results	Study Limitations
			Intervention	Outcome Measures		
Clark et al. (2001)	Determine the effectiveness of the lifestyle intervention in improving mental and physical well-being in ethnically diverse community-living older people	Level I RCT N = 460 older adults living in the community, age ≥60 yr Occupational therapy intervention group n = 232 Control group n = 228 Mean age: 74.9 yr	<i>Intervention</i> Intervention group: 6-mo treatment period, 2 hr/wk of group occupational therapy and up to 10 hr within the 6-mo treatment period of individual occupational therapy <i>Control group:</i> No intervention	<i>Outcome Measure</i> SF-36	No significant differences between the occupational therapy group and the control group were found in physical function and role limitations related to IADLs on the SF-36.	The study used self-report measures. IADL performance was not comprehensively measured. Results may not generalize to other living situations.
Clark et al. (1997)	Evaluate the effectiveness of preventive occupational therapy services tailored for multiethnic, independent-living older adults	Level I RCT N = 361 older adults living in the community, age ≥60 yr Occupational therapy intervention group n = 122 Social control group n = 120 Control group n = 119 Mean age: 74.4 yr	<i>Intervention</i> Intervention group: 9-mo treatment period, 2 hr/wk of group occupational therapy and 9 hr within the 6-mo treatment period of individual occupational therapy <i>Social control group:</i> 9-mo treatment period, 2.25 hr/wk, focused on activities intended to promote social interaction <i>Control group:</i> No intervention	<i>Outcome Measures</i> • Functional Status Questionnaire (FSQ) • SF-36	Significant differences between the occupational therapy group and the two other groups were found on the SF-36, including physical function and role limitations in the performance of some IADLs. No difference was found on the FSQ physical function subscales of IADL.	The study used self-report measures. IADL outcomes were not comprehensively measured. Results may not generalize to other living situations.
De Vreede, Samson, van Meeteren, Duursma, & Verhaar (2005)	Determine whether a functional task exercise program and a resistance exercise program have different effects on ability to perform daily tasks	Level I RCT single-blind N = 98 adults living in the community, age ≥70 yr Functional task intervention group n = 33 Resistance intervention group n = 34 Control group n = 31 Mean age: 74 yr	<i>Intervention</i> <i>Functional task exercise group:</i> Task-specific exercises were performed 3×/wk in 40-min sessions for 12 wk <i>Resistance exercise program:</i> Exercises were performed 3×/wk in 1-hr sessions for 12 wk to strengthen the muscle groups important for daily task performance <i>Control group:</i> No intervention		The functional task exercise group had significantly higher ADAP total scores and individual scores in three of its domains than the other two groups. Nine months after baseline, the changes in ADAP total score and all of its domains of the control group were significantly different from those of the functional task group but not the resistance group.	Men were not included in the study. Limitations include the learning effect; the ADAP tasks were used as a training tool and an assessment tool in the functional training group.

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Author	Study Objectives	Level/Design/Participants	Intervention and Outcome Measures	Results	Study Limitations
Gitlin et al. (2006)	Test the efficacy of a multi-component intervention to reduce functional difficulties and home hazards and enhance self-efficacy and adaptive coping in older adults with chronic conditions	Level I RCT N = 319 older adults with functional difficulties, age ≥70 yr Intervention group n = 160 Control group n = 159 Mean age: 79 yr	<i>Outcome Measure</i> Assessment of Daily Activity Performance (ADAP), which assesses physical functional performance through 16 common tasks, such as transferring laundry and boarding a bus, scored in five domains (upper-body strength, lower-body strength, flexibility, endurance, and balance and coordination) <i>Intervention</i> <i>Intervention group:</i> Five occupational therapy contacts (four 90-min visits and one 20-min telephone contact) and one physical therapy visit (90 min) within a 6-mo period. Intervention included education and problem solving, home modifications, energy conservation, balance, muscle strengthening, and fall-recovery techniques. <i>Control group:</i> No intervention <i>Outcome Measures</i> • IADL Index • Functional Self-Efficacy Index • Home Hazard Index • Control-Oriented Strategy Index, an investigator-developed measure to assess adaptive behavioral, cognitive, and environmental strategies	Intervention group had less difficulty with IADLs, greater confidence in managing daily functional activities, greater use of control-oriented strategies, and greater improvement in functional activities than control group. The magnitude of 12-mo effects was similar to effects at 6 mo for IADL functional difficulty. FT group improved in both components of functional ability (task modification and time performance) but not in MS. The RT group increased MS but only reduced task modification ability. The FRT group had fewer changes in MS and functional ability than the other two groups but had	Study outcomes were self-reported. Attention bias in the intervention group could have an impact on the results.
Mamini et al. (2007)	Determine the efficacy of 10 wk of resistance, functional, or functional plus resistance training in older adults who modify tasks of everyday life and are at risk of subsequent disability	Level I RCT N = 32 older adults living independently, age ≥70 yr with different functional abilities Resistance intervention n = 11 Functional and resistance intervention n = 11	<i>Intervention</i> <i>Control period:</i> First 10-wk period of no intervention <i>Resistance training (RT) intervention:</i> 10-wk intervention period, 2x/wk, 30–45 min each session of graded resistance exercises	FT group improved in both components of functional ability (task modification and time performance) but not in MS. The RT group increased MS but only reduced task modification ability. The FRT group had fewer changes in MS and functional ability than the other two groups but had	Small sample size Possibility of seasonal effect because interventions and control periods were not conducted concurrently.

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Author	Study Objectives	Level/Design/Participants	Intervention and Outcome Measures	Results	Study Limitations
Mann, Ottenbacher, Fraas, Tomita, & Granger (1999)	Evaluate the effectiveness of a system of assistive technology devices and environmental intervention services to promote independence and reduce health care costs	Functional training n = 10 Mean age: 82 yr	<i>Functional training (FT) intervention:</i> 10-wk intervention period, 2x/wk, 30–45 min each session of functional exercises (e.g., chair rise, stair ascent and descent) <i>Functional and resistance training (FRT) intervention:</i> 10-wk intervention period, 2x/wk, 30–45 min each session of resistance and functional training <i>Outcome Measures</i> <ul style="list-style-type: none"> • Task Modification and Timed Performance Scale • Muscle strength (MS) 	consistent improvement in functional ability and muscle strength.	Small sample size could limit generalizability of results. Lack of control of variables in the control group IADL measurement was not comprehensive.
Matteliano, Mann, & Tomita (2002)	Explore the relationship of receipt of community-based occupational therapy services to changes in IADLs	Level I RCT N = 104 older, frail persons living at home; no age criteria provided Intervention group n = 52 Control group n = 52 Mean age: 73 yr	<i>Intervention</i> Intervention group received assistive technology and environmental intervention services every 6 mo for 18 mo. Control group received standard-care services. <i>Outcome Measures</i> <ul style="list-style-type: none"> • Older Americans Research and Service Center Instrument: Measures level of functioning, addresses 7 IADL items • FIM • Craig Handicap Assessment and Reporting Technique: Addresses community mobility and some IADLs, among other outcomes 	After the 18-mo intervention period, both groups had reduced FIM total and motor scores. Compared with the intervention group, a greater percentage of participants in the control group declined in the areas of IADL, mobility, and occupation.	Use of a nonstandardized instrument for measuring IADLs threatens the validity of the results. Only the food preparation outcome was reported for IADL.

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Author	Study Objectives	Level/Design/Participants	Intervention and Outcome Measures	Results	Study Limitations
Pahor et al. (2006)	Assess the effect of a comprehensive PA intervention on the Short Physical Performance Battery (SPPB) and other physical performance measures	Occupational therapy intervention group <i>n</i> = 42 Physical therapy control group <i>n</i> = 39 Mean age: 78 yr	<i>Outcome Measures</i> • IADL level of independence in meal preparation, household management, laundry, and money management. IADLs were scored using the 7-point scale based on level of caregiver assistance used with the FIM. • FIM ADL performance	At 8 wk, the SPPB scores for the PA group were significantly higher than scores for the control group. The 400-m walk speed declined in the control group and remained stable for the PA group. 12.2% of participants in the PA group and 15.6% of participants in the control group experienced major mobility disability.	Retrospective design does not control for extraneous variables.
		Level I RCT <i>N</i> = 424 older adults living in the community, ages 70–89 yr PA intervention group <i>n</i> = 213 Control group <i>n</i> = 211 Mean age: 76.8 yr	<i>Intervention</i> <i>PA intervention:</i> A combination of balance, aerobic, strength, and flexibility exercises with a combination of center- and home-based sessions and group behavioral counseling sessions <i>Control group:</i> Received successful aging health intervention sessions weekly for the first 26 wk and monthly the next 6 mo; session topics included nutrition, medication, foot care, and basic PA education <i>Outcome Measures</i> • SPPB: Standardized time measure of lower-extremity physical performance, which includes standing, balance, walking speed, and ability to rise from a chair • 400-m timed walk • Community Health Activities Model Program for Seniors Questionnaire (CHAMPS PA)		No control group without intervention Measured community mobility (IADL) indirectly by 400-m walk speed
Rejeski et al. (2008)	Investigate the effect of PA on self-efficacy and satisfaction with physical functioning in older adults who have mobility deficits	Level I RCT <i>N</i> = 424 older adults living in the community, age ≥70 yr with lower-extremity mobility impairment	<i>Intervention</i> PA: 12 mo of aerobic, strength, balance, and flexibility exercises, primary walking 5x/wk <i>Control group:</i> Received health education for successful aging (SA) once a month for 12 mo	Both groups increased the weekly time spent doing physical activities of moderate intensity or greater from baseline to 12 mo; however, the PA group reported a significantly greater increase in time spent in physical activities (<i>p</i> <	There was variability in PA goals for each participant in response to a wide range of physical disabilities.

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Author	Study Objectives	Level/Design/Participants	Intervention and Outcome Measures		Results	Study Limitations
			Intervention	Outcome Measures		
Richardson, Law, Wishart, & Guyatt (2000)	Determine whether improvement in ADL and IADL skills is greater when receiving rehabilitation therapy in a simulated environment intervention than a traditional treatment setting (TTS)	Intervention group n = 213 Control group n = 211 Mean age: 77 yr	<p><i>Intervention</i> <i>EASY Street intervention:</i> Three 1-hr treatment sessions/wk for the first 2 mo and 2x/wk for the 3rd and 4th mo, with 13 modules that mimic indoor and outdoor home and community environments that challenge frail elderly persons (e.g., bank, grocery store)</p> <p><i>TTS:</i> Received therapy in a gymnasium or therapy room that did not resemble their living environment</p>	<p><i>Outcome Measures</i></p> <ul style="list-style-type: none"> • CHAMPS PA: Assesses changes in time and frequency of PA undertaken by older adults over time • Self-efficacy for the 400-m walk • Satisfaction with physical function 	<p>.001). Compared with participants in SA education, participants in PA had significantly better profiles for satisfaction with physical function ($p = .006$) and self-efficacy for the 400-m walk ($p = .005$) at 12 mo.</p> <p>No differences between groups were found at baseline. No statistically significant change was found by group, time of assessment, or Group \times Time interaction for overall SAILS or any SAILS domain.</p>	<p>Small sample size and loss of participants may have affected results.</p> <p>The outcome measure may have been insufficiently responsive to detect small but important changes.</p>
Wellman, Kamp, Kirk-Sanchez, & Johnson (2007)	Assess the effectiveness of the Eat Better & Move More (EBMM) Program in a variety of community sites	Level III Pretest–posttest N = 620 adults, ≥ 60 yr (≥ 50 yr for Native Americans) from 10 nationwide nutrition programs with no PA program Mean age: 74.6 yr	<p><i>Intervention</i> <i>EBMM:</i> 12 weekly sessions of talks and activities for group nutrition and PA sessions</p> <p><i>Outcome Measures</i></p> <ul style="list-style-type: none"> • Structured Assessment of Instrumental Living Skills (SAILS) • Assessed at baseline, within 1 wk, intervention, 16 wk post-therapy, discharge, and 8 wk postdischarge 	<p><i>Outcome Measures</i></p> <ul style="list-style-type: none"> • PA questionnaire included Modified Baecke Questionnaire for Older Adults measuring household and leisure activity • <i>Walking:</i> Steps and blocks walked, days walking, stairs climbed • State of change questionnaire 	<p>Participants showed a significant increase in steps taken per day, stairs climbed, average blocks walked, and number of days walked per week.</p>	<p>No control group</p> <p>Wide variation in completion rate</p> <p>Does not report on outcomes for household activities</p> <p>Program completers had significantly fewer health conditions than noncompleters.</p>

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Author	Study Objectives	Level/Design/Participants	Intervention and Outcome Measures		Results	Study Limitations
			Intervention	Outcome Measures		
Willis et al. (2006)	Determine the effects of cognitive training on daily function and durability of training of cognitive abilities	Level I RCT single-blind trial, 5-yr follow-up and 4 groups N = 2,832 Memory group n = 71 Reasoning group n = 705 Speed training group n = 712 Control group n = 704	<p><i>Intervention</i> Four groups: (1) Reasoning training group, (2) memory training group, (3) speed training group, (4) control group</p> <p><i>Independent variables:</i> Type of training, time, booster</p> <p><i>Intervention:</i> 10 training sessions of 60–75 min; booster at 11 and 35 mo (four 75-min sessions to a subsample)</p> <p><i>Outcome Measure</i> Participant self-ratings of difficulty (IADL difficulty from the Minimum Data Set–Home Care [meal preparation, housework, finances, health maintenance, telephone use, and shopping]) measured at baseline, 1, 2, 3, and 5 yr</p>	Participants who received cognitive training reported less difficulty with IADLs at end of training and 5-yr follow-up compared with control group. The effect size reached statistical significance only for the reasoning group.	The study used self-report measures. Participants were not blind to receipt of the intervention. No placebo was used for control group.	
Zidén, Frandin, & Kreuter (2008)	Investigate whether home rehabilitation can improve physical function and daily activity level compared with conventional care in the early phase after hip fracture	Level I RCT N = 102 older adults living in the community post hip fracture, ≥65 yr Multiprofessional home rehabilitation (HR) group n = 48 Conventional care group (CG) n = 54 Mean age: 81.9 yr	<p><i>Intervention</i> HR: Focused on supported discharge, independence in daily activities, and enhancing PA and confidence at discharge. Patients were accompanied home by a physical therapist and occupational therapist and received brief intervention periods for a maximum of 3 wk after discharge. Physical therapy included supported self-efficacy in locomotion and PA and outdoor ambulation. Occupational therapy included safety and independence in ADL.</p> <p>CG: Conventional care</p> <p><i>Outcome Measures</i> • <i>Instrumental Activity Measure (IAM):</i> walking 300m, cooking</p>	<p>A majority (88%) of the HR patients took outdoor walks compared with less than half (46%) of the CG patients ($p < .001$).</p> <p><i>IAM:</i> Significant difference at 1-mo follow-up in outdoor activities ($p = .0014$) and domestic activities ($p = .0292$)</p> <p><i>FAI:</i> Significant differences in domestic and outdoor activities ($p = .0119$ and $.0007$, respectively)</p> <p>HR patients demonstrated a higher degree of recovery.</p>	6 HR patients did not participate in the intervention; some members ($n = 20$, 37%) of the CG participated in other care and rehabilitation. Not all patients received exactly the same intervention (e.g., different number of home visits).	

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			a simple meal, using public transportation, simple shopping, major shopping, cleaning and washing, domestic activities, and outdoor activities • Frenchay Activity Index (FAI)		

Note. ADLs = activities of daily living; IADLs = independent activities of daily living; PA = physical activity; RCT = randomized controlled trial; SF-36 = 36-Item Short-Form Health Survey.

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