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Original Study

The Lifestyle Engagement Activity Program (LEAP): Implementing Social and Recreational Activity into Case-Managed Home Care

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ABSTRACT

Objectives: The Lifestyle Engagement Activity Program (LEAP) incorporates social support and recreational activities into case-managed home care. This study's aim was to evaluate the effect of LEAP on engagement, mood, and behavior of home care clients, and on case managers and care workers.
Design: Quasi-experimental.
Setting: Five Australian aged home care providers, including 2 specializing in care for ethnic minorities.
Participants: Clients ($n = 189$) from 5 home care providers participated.
Intervention: The 12-month program had 3 components: (1) engaging support of management and staff; (2) a champion to drive practice change; (3) staff training. Case managers were trained to set meaningful social and/or recreational goals during care planning. Care workers were trained in good communication, to promote client independence and choice, and in techniques such as Montessori activities, reminiscence, music, physical activity, and humor.
Measurements: Data were collected 6 months before program commencement, at baseline, and 6 and 12 months. The Homecare Measure of Engagement Staff report and Client-Family interview were primary outcomes. Secondary outcomes were the Cohen-Mansfield Agitation Inventory; apathy, dysphoria, and agitation subscales of the Neuropsychiatric Inventory–Clinician Rating; the geriatric depression scale; UCLA loneliness scale; and home care satisfaction scale. Staff provided information on confidence in engaging clients and the Utrecht Work Engagement Scale.
Results: Twelve months after program commencement, clients showed a significant increase in self- or family-reported client engagement ($b = 5.39$, $t[113.09] = 3.93$, $P < .000$); and a significant decrease in apathy ($b = -0.23$, $t(117.00) = -2.03$, $P = .045$), dysphoria ($b = -0.25$, $t(124.36) = -2.25$, $P = .026$), and agitation ($b = -0.97$, $t(98.15) = -3.32$, $P = .001$) on the Neuropsychiatric Inventory-Clinician. Case managers and care workers both reported significant increases in their confidence to socially and recreationally engage clients ($b = 0.52$, $t(21.33) = 2.80$, $P = .011$, $b = 0.29$, $t(198.69) = 2.58$, $P = .011$, respectively). There were no significant changes in care worker–rated client engagement or client or family self-complete measures of depression or loneliness ($P > .05$). Client and family self-rated apathy increased over 12 months ($b = 0.04$, $t(43.36) = 3.06$, $P = .004$; $b = 3.63$, $t(34.70) = 2.20$, $P = .035$)
Conclusions: LEAP demonstrated that home care providers can incorporate social and recreational care into usual practice for older clients, and that this benefits clients' engagement, dysphoria, and agitation.
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Older people wish to stay at home rather than enter a nursing home (also known as long-term care facilities, skilled nursing facilities. or residential aged care facilities).[1,2] This wish has driven the trend of increased home care provision to older people in Australia, the United Kingdom, and the United States.[3] However, a third of

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community-dwelling older persons report feeling lonely, and about half screen positive for depression.[4,5]

Older people spend less time with others, are less socially connected than younger people, and have unmet needs for activity.[6–8] This loss of social engagement with age may be greater in home care recipients who have functional and health limitations; indeed, home care clients reported wanting more meaningful activity.[1,5] Home care recipients also reported fewer opportunities for activities relative to nursing home residents.[9]

The activity theory of aging posits that participating in activities, particularly informal social activity, assists with role maintenance and contributes to subjective well-being in later life.[10,11] In support, a systematic review found that social, leisure, and productive activities were significantly associated with well-being in older people.[12] Activities may affect subjective well-being by influencing feelings of affiliation, mastery, meaning, and autonomy.[13] Interventions that increase social activities improve depression, social isolation, and quality of life.[14–16]

Home care clients are a population who may particularly benefit from increased activity. However, most intervention trials to provide or improve activities for older people have been in the residential care setting.[17] A few studies have suggested that activity interventions such as music and reminiscence may have a greater impact on emotional well-being and life satisfaction for older adults living at home relative to residential care.[18,19] Tailored psychosocial activity programs delivered to older people with dementia and their carers living at home improve outcomes for recipients and reduce carer burden and involve the intensive use of experienced therapists in addition to existing care.[20,21] Costs of the programs were estimated to be $961.63 and $1790 per person with dementia and carer dyad, with cost-effectiveness demonstrated with savings particularly in informal care.[22,23]

Training existing staff may be a feasible alternative to using experienced therapists in delivering activity interventions to home care recipients. The Lifestyle Engagement Activity Program (LEAP) is a training and practice change program for home care case managers and care workers to incorporate social support and recreational activities as part of home care. The aim of this study was to evaluate the effects of LEAP on client engagement (primary outcome) mood, behavior and satisfaction with care as well as the impact of the program on case manager and care worker work satisfaction and self-efficacy.

Methods

The University of New South Wales' Human Research Ethics Committee approved procedures (HC12383). LEAP was prospectively registered on the Australian New Zealand Clinical Trials Registry (ACTRN12612001064897).

Design

A quasi-experimental design was used with data collected 6 months before program commencement, at the start of the intervention program (0 months), and then after 6 (midpoint) and 12 months (postprogram). The −6 to 0 month time period was used as the preprogram comparison for the intervention period between 0 and 12 months.

Setting

Five accredited aged home care service providers from New South Wales, Australia, were invited to participate by contacting providers by phone or e-mail, providing written information and having face-to-face meetings. Providers were approached who were known to researchers, and to achieve diversity in location (regional and metropolitan), client diversity (2 target clients from ethnic minority non–English-speaking backgrounds), and provider size (large chains and smaller providers). Providers had to be accredited and be providing government-funded case managed home care services. Signed contracts were executed between researchers and participating organizations outlining the commitments of both parties toward the program. Data collection occurred between October 2012 and July 2014.

Recruitment

Case managers invited all eligible clients receiving a Community Aged Care Package (CACP; equivalent to low-level residential care), Extended Aged Care At Home (EACH) package equivalent to high-level residential care, or an Extended Aged Care At Home Dementia (EACH-D) equivalent to high-level residential care and having behavioral or psychological symptoms of dementia, to participate (see CONSORT diagram, Figure 1). Clients were ineligible if they had indicated that they would stop receiving services (eg, were about to enter nursing home), were acutely unwell, or had no proxy to consent on their behalf if unable to consent themselves.[24] Details of assenting clients were passed on to the research team who obtained written consent, unless the client was cognitively impaired, in which case verbal assent was obtained and written consent was obtained from a family member. Family members were invited to participate by researchers after obtaining consent from clients, or by the case manager/research team if the client was cognitively impaired.

Clients were recruited at −6 months and 0 months, as the intervention began after the 0-month assessment. Care workers agreed to participate after invitation by the site manager or their nominee, and were paid or received a small gift (eg, a movie ticket) at the end of the study in return for completing questionnaires. Family members and staff provided written informed consent.

Intervention

The development and design of LEAP has been described in detail.[25] The 12-month program had 3 components:

(1) engaging management and staff to support the program;
(2) employing a LEAP champion to drive practice change;
(3) staff training.

The research team (LFL and JB) delivered all training sessions. LEAP Champions were existing staff of home care providers. Champions were taught in a 5-hour session about organizational change, and trained in the interpersonal skills required for their role. Case managers were trained during a 3-hour session to set meaningful social and/or recreational goals as part of care plans. Care workers were trained over four 2- or 3-hour sessions on the following: taking a person-centered individualized approach; dementia and the unmet needs model of challenging behaviors; communication skills; autonomy and control; reminiscence; music; physical activity; Montessori activities; humor; and reciprocity. The LEAP Champion accompanied care workers on buddy visits to support them in practicing client engagement techniques.

The research team neither provided direct intervention to clients, nor advice to care staff as to the frequency or type of activities or social support they had to undertake with specific clients, advocating for a negotiated, individualized approach based on the client's other care needs and abilities. Examples of the goals set and achieved during LEAP are as follows: update my computer skills with my care worker's help so that I can Skype my family in America, visit my sister every 4 to 6 weeks with transport assistance from my care worker, purchase and

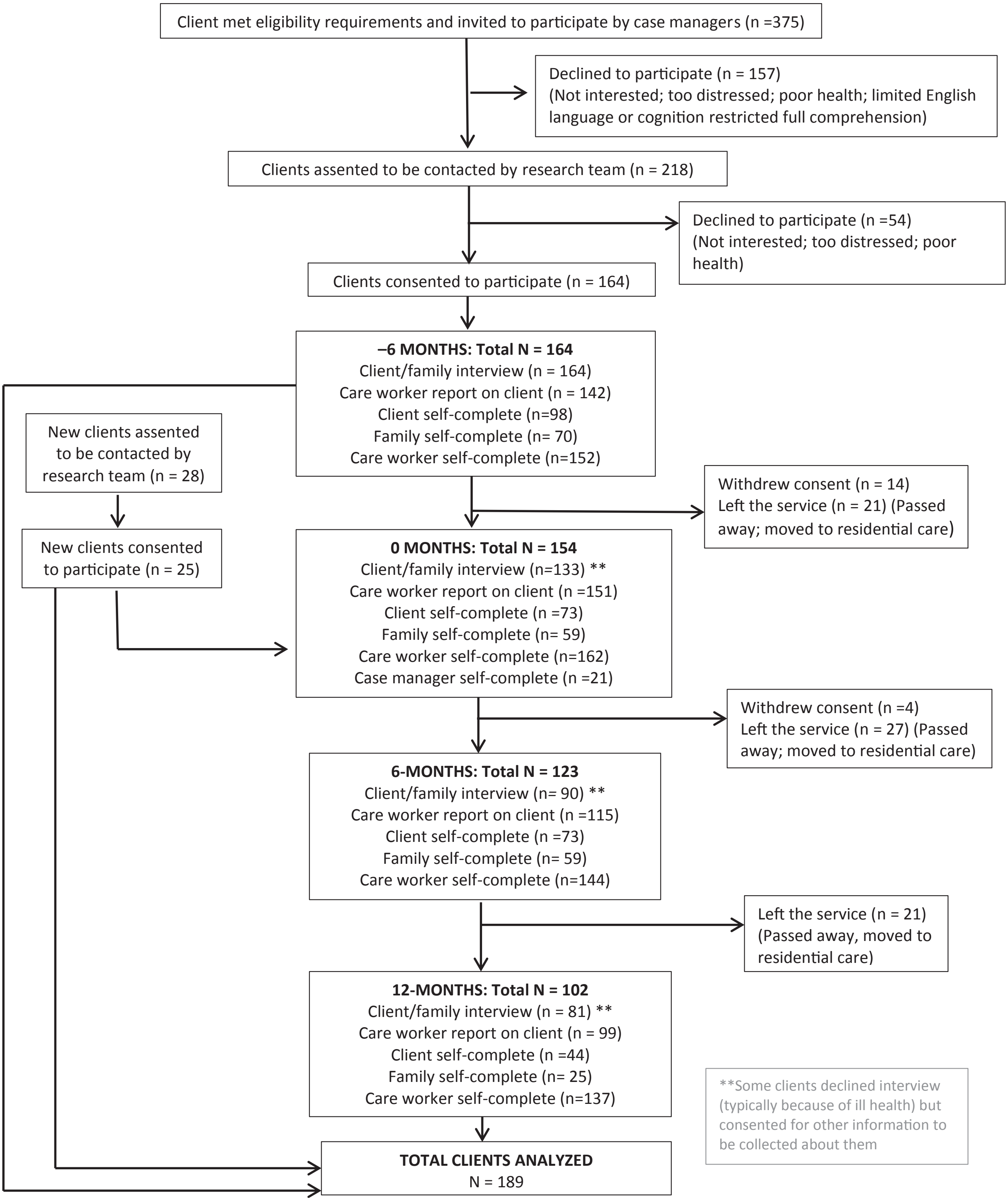

Fig. 1. Pattern of client, family and care worker recruitment and participation.

plant some new plants before spring, make dumplings or other traditional foods once a week and eat them with my care worker, try out day care once in the next month and see how I like it, go to the library weekly with my care worker to borrow audio books, and go to the movie day/craft group organized my by case manager once a month. In addition to planned activities, care workers were encouraged to incorporate engagement strategies into other care activities; for instance, playing the client's preferred music while cleaning the house and encouraging them to sing along together, taking a scenic route home from the shops and discussing how the streetscape has changed, or telling jokes with the client while preparing a meal.

Measures

Clients and families were interviewed face-to-face at home for their first assessment (either −6 or 0 months) then either face-to-face or by telephone on subsequent visits. Researchers made a judgment about the clients they needed to interview in person, and those they could obtain accurate information from by phone. Families who could not attend the home visits were interviewed by telephone.

Primary outcome measure: Client engagement

Client engagement was assessed from both care worker and client/family perspectives, using the Homecare Measure of Engagement Staff report and Client-Family interview, the HoME-S and HoME-CF, respectively, which were developed for this study. The measures have good internal consistency, reliability and convergent validity with clinician-ratings of apathy.[26]

The HoME-CF is a semistructured interview that is rated by researchers based on client and/or family interviews on client engagement during care worker visits. Trained interviewers rated the frequency of (1) conversational engagement and (2) recreational engagement on a Likert scale from 1 (almost none at all) to 5 (a lot); and client feelings (or negative or positive attitudes) toward each engagement domain from 1 (extremely positive) to 6 (very negative). Where frequency and/or feeling items were not applicable, scores were rated as zero. Feeling scores were reverse coded and multiplied with the respective frequency, and then summed to create a total HoME-CF score.

The HoME-S is a 6-item questionnaire self-completed by care workers that measures rate of refusal (how often the client declined care worker interactions, eg, conversation/activity); average amount of time that the client was occupied in conversation or activity with the care worker during visits; degree of client attention to the interaction; the client's positive or negative attitude toward the interaction; appropriateness of the client action toward the interaction; and the passive versus active nature of engagement.

Secondary outcome measures

Secondary outcome assessment tools and covariates for both client and care worker are detailed in Table 1. Resident secondary outcomes were selected in domains that theoretically would be impacted by the program. In clients, these are agitation, dysphoria/depression, loneliness, apathy, and satisfaction with care. In care staff, these are work satisfaction and self-efficacy in engaging clients. For all outcome measures, a higher score indicates higher levels of that outcome (eg, higher scores on the Cohen-Mansfield Agitation Inventory indicate greater agitation).

Translations

Client assessments were conducted in English, Cantonese, Mandarin, Vietnamese, Arabic, or Spanish according to the preferred language of participants. Care workers completed the questionnaires in either English or traditional Chinese. Preexisting translations of the measures were used where available (see Table 1). Where translations were not available, English scales were translated by accredited professional translators and the translations independently reviewed by accredited professional translation checkers. The translations were also reviewed by bilingual research staff familiar with the psychological and research constructs.

Power

The intention was to recruit a sample of 211 clients, which would have given at least 80% power to detect a small effect size (Cohen $d = 0.2$) at a significance level of 2-sided .05, assuming a median intraclass correlation ($\rho = 0.5$) between pre- and postintervention

Table 1
Secondary Outcome Measures for Client and Care Staff and the Covariates

	Measure	Data Collection Method
Client secondary outcomes		
Agitation	34-item Cohen-Mansfield Agitation Inventory – relative[21]	Family self-report
	13-item Agitation subscale of The Neuropsychiatric Inventory – Clinician Rating Scale[27,*]	Client/family interview
Dysphoria/depression	15-item Geriatric Depression Scale[28,†]	Client self-report
	13-item Dysphoria subscale of The Neuropsychiatric Inventory – Clinician Rating Scale[29,*]	Client/family interview
Loneliness	20-item Revised UCLA Loneliness Scale[30,‡]	Client self-report
Apathy	18-item Apathy Evaluation Scale – self and informant[31]	Client and family self-reports
	11-item Apathy subscale of The Neuropsychiatric Inventory – Clinician Rating Scale[27,*]	Client/family interview
Satisfaction with care	9-item care worker subscale and 13-item case manager subscale of the Home Care Satisfaction Measure[32]	Client self-report
Client Covariates	Age; gender; care site; hours and type (ie, CACP, EACH or EACH-D) of packaged care; duration of package; the presence (or absence) of a cohabiting carer; education; previous employment; significant life events/functional change as reported by case manager; case manager; 4-item attentiveness subscale of the positive and negative affect scale (PANAS-X) client self-report in reference to during care worker visits over the past 2 weeks [62]; severity of cognitive impairment as measured by the Global Deterioration Scale[33]; country of birth; years lived in Australia; English proficiency; income; living situation; relationship of family member; relationship between care worker and client as measured by the 4-item Bond subscale of the Working Alliance Inventory-Short Form client report[34]	Client/family self-report Care plan audit Case manager interview Client/family interview
Care staff secondary outcomes		
Work satisfaction	5-item dedication subscale of the Utrecht Work Engagement Scale[35]	Care staff self-report
Self-efficacy in engaging clients	5- and 9-item questionnaire assessing care worker and case manager confidence in engaging clients, respectively	Care staff self-report
Care staff covariates	Age; gender; care site; hours of work; duration of employment in current role and in the aged care industry; name of manager; education; ethnicity; language spoken; diversional therapy or similar experience; number of clients/staff supported; relationship between care worker and client as measured by the 4-item Bond subscale of the Working Alliance Inventory-Short Form care worker self-report[34]; country of birth; years lived in Australia; English proficiency; duration of relationship with client; number and duration of care visits to clients over 2 weeks	Care staff self-report

CACP, Community Aged Care Package; EACH, Extended Aged Care Package; EACH-D, Extended Aged Care Package with Dementia.

[*] Preexisting translated versions in Spanish and Chinese are available.

[†] Preexisting translated versions in Spanish, Vietnamese and Arabic are available.

[‡] Preexisting translated versions in Arabic and Spanish are available.

measures.[36,37] This power analysis was based on one group comparing pre- and postmeasures for the primary outcome measure.

Data analysis

All analyses were conducted using IBM SPSS 22 (IBM SPSS Statistics, IBM Corporation, Chicago, IL). Two-tailed tests were performed with alpha set at 0.05 for all analyses. Missing data for client demographics were 12% or less for all variables except for client education, which had 26% missing where regressions were used to impute missing information with all other demographic variables as predictors. Ten imputations were run. For scales with 19% or fewer items missing, mean substitution was used to impute the missing items. Scales with 20% or more items missing were treated as invalid.

Most outcome measures were not normally distributed at one or more time points. These were transformed where possible: normality on Apathy and Dysphoria on the Neuropsychiatric Inventory-Clinician (NPI-C) was rectified using square root transformations, and normality on the Apathy Evaluation Scale (AES) client report was rectified using a log 10 transformation. Mixed models are fairly robust to nonnormality and histograms of the residuals (ie, observed data value minus the predicted value) did not identify any influential outliers with a high residual value.[33]

All clients enrolled in the study were included in analyses as per intention-to-treat principles. Multilevel linear models were used to examine the impact of the intervention on outcome measures over time. These models take into account correlations between repeated measurements. Covariates for each model were identified through univariate testing of their association with dependent variables. Age and gender were included in all models as well as the identified covariates. We tested the models with and without random effects. Models were a better fit with random effects, as indicated by smaller Schwarz Bayesian criterion and Akaike information criterion indices, and thus random effects were included in these models.

Results

Sample Demographics

In total, 189 clients and/or their family, and 162 care workers participated (see Figure 1). The current sample of 189 clients gave greater than 70% power to detect a small effect size. Twelve percent of clients (n = 22) were from provider A; 40.7% (n = 77) were from provider B; 22.2% (n = 42) were from provider C; 15.9% (n = 30) were from provider D; and 9.5% (n = 18) were from provider E.

Participant demographics and care characteristics are provided in Table 2. Clients and care workers were typically matched on language spoken; 60% (n = 114) spoke English with their care workers; 16% (n = 31) spoke a Chinese dialect; 12% (n = 22) spoke Vietnamese; 6% (n = 12) spoke Spanish; and 5.3% (n = 10) spoke Arabic.

Of the 189 participating clients, 46% participated at all 4 time points (n = 87), 29% participated in 3 time points (n = 54), 15% participated in 2 time points (n = 28) and 11% participated once (n = 20). By 12 months, client attrition was 66% (n = 102). Across all time points, only 42% to 59% of clients and 25% to 48% of families completed self-report measures (see Figure 1).

Primary Outcome: Client Engagement

Outcome scores at each time point are reported in Table 3, along with standardized coefficients from linear mixed models for tests of differences between mean scores. HOME-CF scores were the same level at −6 and 0 months, but were significantly higher at 12 months compared with 0 months.

There was no significant difference in change in HoME-S mean scores at any time point (Table 3).

Table 2
Demographic and Other Characteristics of Client, Family, and Care Staff at −6 Months

Demographic and Other Characteristics (n*)	% (n) or Mean ± SD (Range)
Client (n = 189)	
Age (189)	82.6 ± 8.1 (52.8–113.6)
Female gender (189)	73.5 (139)
Marital status (179)	
Single, never married	2.2 (4)
Separated/divorced/widowed	58.7 (105)
Married/de facto	39.1 (70)
Lives alone (179)	46.4 (83)
Years of education (141)	8.9 ± 4.0 (0–21)
English-speaking country of birth (189)	55.0 (104)
Care Package (189)	
CACP	84.1 (159)
EACH	9.5 (18)
EACH-D	6.3 (12)
Hours of paid care a week (176)	5.8 ± 3.3 (1.5–16.0)
Years with current service provider (189)	1.9 ± 2.3 (0–12)
Chart diagnosis of dementia	29.1 (55)
Global Deterioration Scale ≥ 3 (187)	44.4 (83)
Geriatric Depression Scale ≥ 6 (96)	40.6 (39)
Speaks English well (168)	57.1 (96)
Family (n = 139)	
Female gender (138)	67.4 (93)
English-speaking country of birth (129)	61.2 (79)
Relationship to client (137)	
Spouse	28.5 (39)
Son/daughter	63.5 (87)
Other (eg, grandchild)	8.0 (11)
Lives with client (136)	66.9 (91)
Care workers (n = 184)	
Age (173)	48.4 ± 8.3 (23.2–68.3)
Female gender (184)	92.9 (171)
Years of education (179)	11.3 ± 2.4 (0.5–16.0)
English-speaking country of birth (184)	35.9 (66)
Speaks English well (182)	85.2 (155)
Years of employment as care worker (172)	5.0 ± 4.4 (0.1–26.5)
Hours of employment per fortnight (184)	37.7 ± 18.6 (4–76)
Diversional therapy or lifestyle experience (184)	8.2 (15)
Number of clients supported (173)	7.6 ± 4.9 (0–30)
Case managers (n = 28)	
Age (28)	46.7 ± 9.0 (28.1–62.5)
Female gender (28)	96.4 (27)
Years of education (28)	14.4 ± 2.3 (10–22)
English-speaking country of birth (28)	46.4 (13)
Speaks English well (28)	100 (28)
Years of employment as case manager (28)	3.7 ± 3.8 (0–15)
Years of employment in aged care industry (28)	9.6 ± 6.7 (0.4–27)
Diversional therapy or lifestyle experience (28)	14.3 (4)
Number of care workers managed (28)	12.2 ± 8.8 (0–40)
Number of clients managed (28)	33.9 ± 19.9 (5–91)

CACP, Community Aged Care Package; EACH, Extended Aged Care Package; EACH-D, Extended Aged Care Package with Dementia.

*Sample size indicates amount of data for each variable.

Client Secondary Outcomes

Mean scores on Apathy, Dysphoria, and Agitation as rated on the NPI-C were similar at −6 and 0 months, but were significantly lower at 12 months compared with 0 months.

The mean client self-rating on the AES did not differ between −6 and 0 months, but was significantly higher at 12 months compared to 0 months. There were no significant differences on the mean Geriatric Depression Scale or UCLA loneliness scale scores during the preintervention and intervention periods.

The mean family self-rating on the AES was the same between −6 and 0 months, but was significantly higher at 12 months compared with 0 months.

The mean client satisfaction with case manager rating was higher at 0 months compared with −6 months, but there was no difference

Table 3

Client and Care Staff Outcomes at −6, 0, +6 and +12 months

Outcome Measure	Mean ± SD[*]				Differences Between Mean Values Test Statistics and P Value for Mean Values		Entered Covariates
Client	−6	0	+6	+12	−6 to 0	0 to +12	
HoME-CF	26.17 ± 11.90	26.83 ± 11.97	30.12 ± 13.46	32.84 ± 12.68	b = 0.23, $t(139.58) = 0.21$, $P = .833$	**b = 5.39, $t(113.09) = 3.93$, $P < .001$**[‡]	Gender, age, ES-COB, CW-bond, marital status
HoME-S	4.96 ± .99	4.96 ± .95	4.87 ± .93	5.13 ± .79	b = −0.08, $t(176.80) = -1.00$, $P = .317$	b = 0.07, $t(111.48) = 0.84$, $P = .404$	Gender, age, ES-COB, CW-bond, living alone
NPI-C Apathy	11.14 ± 7.65	11.84 ± 8.12	10.99 ± 7.9	9.81 ± 7.29	b = −0.11, $t(170.43) = -1.18$, $P = .239$	**b = −0.23, $t(116.10) = -2.03$, $P = .045$**[†]	Gender, age, GDS, ES-COB, living alone
NPI-C Dysphoria	9.06 ± 5.78	8.60 ± 6.20	8.41 ± 5.99	7.54 ± 5.88	b = 0.07, $t(155.20) = 0.78$, $P = .438$	**b = −0.25, $t(124.36) = -2.25$, $P = .026$**[†]	Gender, age, GDS
NPI-C Agitation	4.96 ± 4.96	4.29 ± 4.05	4.09 ± 4.02	3.30 ± 3.49	b = 0.59, $t(171.70) = 1.55$, $P = .123$	**b = −0.97, $t(98.15) = -3.32$, $P = .001$**[‡]	Gender, age, GDS, ES-COB, living alone
Client AES Apathy	35.32 ± 10.13	34.77 ± 10.36	32.47 ± 8.06	38.8 ± 9.87	b = 0.00, $t(70.96) = 0.31$, $P = .714$	**b = 0.04, $t(43.36) = 3.06$, $P = .004$**[†]	Gender, age, GDS, living alone
Geriatric Depression Scale	5.52 ± 4.05	4.99 ± 3.5	3.89 ± 2.40	4.87 ± 3.70	b = 0.60, $t(72.62) = 1.62$, $P = .109$	b = −0.04, $t(30.46) = -0.12$, $P = .908$	Gender, age, GDS, ES-COB,
UCLA Loneliness Scale	40.41 ± 10.79	40.82 ± 10.71	38.45 ± 9.48	39.20 ± 10.11	b = −0.22, $t(69.61) = -0.21$, $P = .831$	b = −0.29, $t(53.61) = -0.17$, $P = .865$	Gender, age, GDS
Client Satisfaction with CM	49.97 ± 10.75	74.23 ± 16.7	77.51 ± 17.13	74.53 ± 17.10	**b = −24.41, $t(91.44) = -13.26$, $P < .001$**[‡]	b = 1.70, $t(63.92) = 0.60$, $P = .548$	Gender, age, ES-COB,
Client Satisfaction with CW	78.98 ± 15.08	79.53 ± 14.72	82.87 ± 17.19	80.65 ± 16.10	b = 0.37, $t(88.32) = 0.25$, $P = .801$	b = 0.79, $t(45.06) = 0.37$, $P = .708$	Gender, age, ES-COB, living alone
Family AES Apathy	43.00 ± 11.75	41.65 ± 13.13	42.58 ± 10.12	44.59 ± 10.38	b = 0.39, $t(34.88) = 0.35$, $P = .730$	**b = 3.63, $t(34.70) = 2.20$, $P = .035$**[†]	Gender, age, GDS
Family CMAI-R Agitation	46.30 ± 16.27	43.39 ± 12.64	45.13 ± 14.10	45.64 ± 18.86	b = 2.38, $t(70.85) = 1.41$, $P = .160$	b = 0.79, $t(24.51) = 0.49$, $P = .632$	Gender, age, GDS, ES-COB, living alone
Case manager							
Work Satisfaction	5.14 ± .74	4.76 ± 1.12	5.42 ± .52	5.52 ± .32	**b = 0.50, $t(11.53) = 2.92$, $P = .013$**[†]	**b = 0.64, $t(27.23) = 3.30$, $P = .003$**[†]	Age[§]
Self-efficacy	7.99 ± 1.07	7.54 ± .80	7.68 ± .91	8.06 ± .82	**b = 0.47, $t(14.50) = 2.16$, $P = .048$**[†]	**b = 0.52, $t(21.33) = 2.80$, $P = .011$**[†]	Age[§]
Care worker							
Work Satisfaction	5.33 ± .72	5.36 ± .67	5.31 ± .65	5.36 ± .63	b = 0.01, $t(200.15) = 0.21$, $P = .837$	b = 0.10, $t(307.96) = 0.98$, $P = .340$	Gender, age, work hours, care site
Self-Efficacy	8.22 ± 1.11	8.02 ± 1.44	8.25 ± 1.14	8.34 ± .97	b = 0.15, $t(191.84) = 1.26$, $P = .208$	**b = 0.29, $t(198.69) = 2.58$, $P = .011$**[†]	Gender, age, education, care site

Note: statistically significant results are indicated in bold.

AES, Apathy Evaluation Scale; CM, case manager; CMAI-R, Cohen-Mansfield Agitation Inventory—Relative; CW, care worker; CW-bond, Bond subscale of the Working Alliance Inventory; ES-COB, English-speaking Country of Birth; GDS, Geriatric Depression Scale; HoME-CF, Homecare Measure of Engagement—Client and Family Interview; HoME-S, Homecare Measure of Engagement—Staff Report; NPI-C, NeuroPsychiatric Inventory—Clinician Rating Scale.

[*] Data are raw, nontransformed scores.

[†] $P < .05$.

[‡] $P < .001$.

[§] Gender not controlled for because there was only 1 male case manager.

on mean ratings at 0 and 12 months. There were no significant differences on mean satisfaction with care worker scores over time.

Case Manager Secondary Outcomes

Mean case manager work satisfaction scores and self-efficacy scores were significantly higher at −6 months and +12 months in comparison with 0 months.

Care Worker Secondary Outcomes

There were no significant differences on mean care worker satisfaction with work over time. Care worker self-efficacy scores were significantly different between −6 and 0 months and 0 and 12 months, following the same pattern of decrease and then improvement as case manager outcomes.

Discussion

LEAP demonstrated the feasibility of introducing social and recreational support into case-managed home care, and that this change in care was associated with increased client engagement, and decreases in apathy, agitation, and dysphoria as reported during interview, but contradictorily increases on client and family self-rated apathy.

LEAP also resulted in higher work satisfaction among case managers, as well as self-efficacy in both case managers and care workers. Case managers may have been more satisfied because they were engaging clients with a relationship focus as well as a task focus. Self-efficacy may have dropped in the preintervention period because the research team publicized the content of the program and staff may have become aware that there was much more to learn about engaging clients; however, after the program had commenced and was put into practice, staff self-efficacy increased.

Self-rated and family-rated apathy increased over the duration of LEAP, the difference between the self-complete and interview-based apathy results may be because of differences in the constructs of apathy in the measurement tools, and because of low return rates of self-complete questionnaires. Only clients and family able and willing to complete self-complete questionnaires did so, and the proportion of self-complete questionnaires returned declined throughout the study with many clients reporting that they struggled to complete them (see Figure 1). Among those clients who returned self-report information at −6 months, clients who did so again at 12 months were significantly less apathetic, had higher cognitive function and were more likely to be women, than those who did not return this information. Thus these self-complete data are less generalizable and the validity of this information is uncertain.

Most of the changes demonstrated in this study at 12 months were small. The primary outcome of client/family-rated engagement yielded a Cohen d effect size of 0.27. Similarly, reduction of symptoms on the NPI subscales of apathy, agitation, and dysphoria and increase in client satisfaction with case managers, yielded small effect sizes of $d = 0.21$, 0.21, 0.24, and 0.11 respectively. Family- and client-reported increases in apathy symptoms yielded effect sizes of $d = 0.15$ and 0.40, respectively. However, large effect improvements were detected for case manager outcomes (Cohen $d = 0.68–0.69$). The small effect sizes are in contrast to studies of more intensive interventions in which therapists have worked directly with people with dementia and their carers where large effect size changes were demonstrated.[20,21] Choice of intervention to increase activity provision for older adults must balance the increased costs and greater benefits of an intensive program individually targeted by specialist therapists, against the reduced costs and smaller benefits of the approach demonstrated here which is integrated within existing services. Additional training for case managers on providing “on-the-job” supervision for care workers may have improved the effect of the intervention.

Our findings support the activity theory of aging,[10,11] inasmuch as the LEAP intervention which increased activity and engagement, also improved apathy, dysphoria, and agitation. This reinforces the idea that keeping active is important for the well-being of older people.

One of the strengths of LEAP was that we included a large sample of home care clients and care workers drawn from a diversity of home care providers, in terms of size (large chains and single-site providers), location (both regional and metropolitan sites), and culture of clients. The study was inclusive, and clients of all cognitive abilities were able to participate. Clients were representative of Australian home care in terms of age, income type, length of time with provider, and dementia prevalence. We had higher proportions of women (74% vs 65%), clients living alone (46% vs 38%), clients from ethnic minority backgrounds (55% vs 37%), and CACP packages (84% vs 78%) relative to Australian home care in general.[38] Care worker demographics were representative of the Australian aged care workforce.[20]

The key limitation of the study was that there was no control group, which increased the risk of detection and performance biases. There was substantial client dropout (63%). This was primarily due to ill health, residential care placement, and death. Adjustment for multiple comparisons was not made, as outcome measures were correlated. The high attrition rate and poor return of self-complete questionnaires meant lower power than anticipated for some secondary outcome measures, and some of the self-complete scales may have not been suitable for participants with dementia. It is feasible that the changes on the HOME-CF and NPI-C were due to interviewer bias. Our confidence in our researcher-rated findings is supported by feedback from exit interviews from case staff which will be reported in our process evaluation. There was a ceiling effect on the HOME-S, the care worker–rated engagement measure.

Satisfaction with case management improved in the preintervention period and then returned to normal; this may have been due to extra attention shown to clients by case managers during the recruitment period, or as a result of indirect attention from research staff. An alternative explanation may be that consumer-directed care was being introduced to Australian home care in August 2013, and although the clients in this study were not on consumer-directed packages, there was extensive discussion of having a consumer focus within the home care sector, which may have affected case manager behavior.

Future research could evaluate LEAP in a clustered randomized controlled trial, informed by power calculations based on these data. The program could also be refined to increase its influence on staff care practices and client outcomes; the process evaluation will inform these changes. Choice of instruments would also need to be considered, particularly the HOME-S, which has a ceiling effect, and the suitability of some of the tools for people with dementia.

We trained and supported home care staff to improve client outcomes. This pragmatic method was designed to minimize costs and deliver sustainable practice change. We believe that practice change was brought about by changing procedures (eg, care plan structures, care planning practices); embedding LEAP in internal communications (eg, staff meetings, internal newsletters); regularly scheduled, engaging skills-based training; and empowerment of care workers. Elements of success and challenges will be explored further in the LEAP process evaluation.

In conclusion, the LEAP evaluation has shown that it is feasible to incorporate social support and recreation into home care, and that doing so resulted in decreased apathy, agitation, and dysphoria. The program is essential for home care clients given their high level of unmet needs for activity as well as mental health issues. Home care providers should take more responsibility in contributing to the social engagement and well-being of their clients.

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