Adult Day Health Center Participation and Health-Related Quality of Life

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Purpose: The purpose of this study was to assess the association between Adult Day Health Center (ADHC) participation and health-related quality of life. Design and Methods: Case-controlled prospective study utilizing the Medical Outcomes Survey Form 36 (SF-36) to compare newly enrolled participants from 16 ADHC programs with comparable community-dwelling older adults who did not attend an ADHC. Assessments were conducted at study enrollment, 6 and 12 months. Results: ADHC participants (n = 57) and comparison group subjects (n = 67) were similar at baseline in age, ethnic diversity, medical conditions, depression, cognition, immigration history, education, income, and marital status. Significantly more comparison group subjects lived alone (p = .002). One year after enrollment, the SF-36 domains role physical and role emotional improved significantly. Adjusted role physical scores for ADHC participants improved (23 vs. 36) but declined for the comparison group (38 vs. 26, time by group interaction p = .01), and role emotional scores improved for ADHC participants (62 vs. 70) but declined for the comparison group (65 vs. 48, time by group interaction p = .02). Secondary analyses revealed that changes in daily physical functioning, depressed affect, or cognitive functioning did not explain the improvements found in role physical and role emotional scores for ADHC participants. No significant differences in trends for the 2 groups occurred for the SF-36 domains physical functioning, social functioning, and mental health. Implications: ADHC participation may enhance older adults’ quality of life. Quality of life may be a key measure to inform care planning, program improvement, and policy development of ADHC.

Key Words: Adult Day Service, Participant perception, Community care, Person–Environment framework

Established nearly 50 years ago, Adult Day Service (ADS) centers provide outpatient support services to help older adults with functional limitations remain in the community and reduce caregiver burden. In the United States, more than 3,500 ADS centers serve more than 150,000 participants (National Adult Day Services Association, 2007). Although results of the numerous studies on the effects of ADS on caregiver burden are mixed (Gaugler & Zarit, 2001; Gaugler et al., 2003; Mason et al., 2007; Zank & Schacke, 2002; Zarit, Stephens, Townsend, & Greene, 1998), few studies have assessed whether ADS directly benefits participants (U.S. Department of Health and Human Services, 2005). ADSs are designed to maintain or improve participants’ functional status by providing an environment with health services and social interactions tailored to participants’
functional level (National Adult Day Services Association). An important outcomes question is therefore whether or not participants perceive that ADS improves their physical, social, and emotional functioning. Health-related quality of life (HRQOL) is a multidimensional measure that assesses patients’ perceptions of their functional limitations as it relates to their physical, social, and emotional functional. HRQOL may be a key measure to assess ADS outcomes because it potentially could inform individual care plans and quality assessments (Kane, 2003; Mason et al., 2007; Norris et al., 2008). However, little is known whether ADS attendance is associated with participants’ quality of life.

**Background**

ADS centers are often categorized into the social model, specialized model, or medical model (National Adult Day Services Association, 2007). Centers that have adopted the social model offer social services, nutrition, and assistance with activities of daily living (ADL). Specialized ADS centers are similar to social model centers except they target individuals with specific diagnoses, such as dementia, mental illness, or acquired brain injuries. Centers that have adopted the medical model (also known as Adult Day Health Center or ADHC), offer a multidisciplinary team approach that includes skilled nursing and rehabilitation therapy in addition to the social model services. In some states, ADHC services are Medicaid reimbursable because they are considered to be an alternative to institutional-based long-term care (U.S. Department of Health and Human Services, 2005). This study considers HRQOL outcomes associated with the medical model of ADS.

Few studies of ADHC conducted in the United States have reported health-related outcomes for participants. Studies conducted in Germany and Japan suggest benefits on subjective well-being, dementia symptoms, and mortality (Kuzuya et al., 2006; Zank & Schacke, 2002). However, it is unclear whether the adult day center models in those countries are comparable to the U.S. ADHC model. A U.S. study found that ADHC participants who had not been recently hospitalized reported significantly greater improvement in their physical health compared with adults who had recently been discharged from an acute care hospital (Rothman, Hedrick, Bulcroft, Erdly, & Nickinovich, 1993). The same study also found that among unmarried individuals, psychosocial health status of ADHC attendees improved compared with those receiving usual care (Hedrick et al., 1993). In contrast, a Canadian study of day centers with care models similar to the U.S. ADHC model found no significant difference between those randomly assigned to ADHC versus community care in terms of clients’ anxiety, depression, and functional status (Baumgarten, Lebel, Laprise, Leclerc, & Quinn, 2002). Follow-up data in this study were collected only 3 months after enrollment, which may be too short of an interval for a measurable change to occur. Another randomized study of an ADHC intervention also showed little or no change in ADL functioning and nursing home utilization for participants. However, many subjects assigned to participate in ADHC did not attend ADHC, suggesting that additional studies are needed to understand potential participant benefits of ADHC (Weissert, Wan, Livieratos, & Katz, 1980).

**Why Measure Quality of Life in ADHC Participants?**

ADHC participants suffer from multiple chronic conditions and functional limitations of varying etiology (Norris et al., 2008; Werner, Greenfield, Fung, & Turner, 2007). Improving individual health conditions is less a goal of AHDS than reducing participants’ overall disease burden. This is accomplished by offering therapy, physical care, and social activities in a safe environment tailored to participants’ functional level (National Adult Day Services Association, 2007). However, it remains unclear whether the ADHC environment influences participants’ perception about how their functional limitations impact their quality of life.

The Person–Environment (P-E) framework describes the continuum of individuals’ competence in the context of the environment and suggests that behavior and function result from the interaction between the individuals’ competencies, the demands of the environment, and the adaptation of the person to the environment. The model further suggests that the influence of the environment on well-being increases with decreased competence. In the context of ADHC, the competencies affected include physical, cognitive, and social functioning and financial resources. Environmental demands in the P-E framework include the physical environment and support services and relationships. Environmental demands that exceed an individual’s competencies may lead to stress, anxiety, and diminished functioning. Environmental demands
below an individual’s competencies may lead to boredom and apathy (Lawton, 1980; Lawton & Nahemow, 1973; Newcomer, Kang, LaPlante, & Kaye, 2005). An optimal environment adapts to the ongoing changes of individuals’ competencies by, for example, providing resources to compensate for decreasing competencies. An environment that is not aligned with an individual’s capabilities may lead to a decline in overall quality of life. Quality of life measures thus inform whether the social and physical environment of a long-term care setting is meeting the participants’ competencies (Lawton, 1983; Kane, 2003).

Recent literature describes the importance of quality of life assessments in determining outcomes of nursing home care (Degenholtz, Rosen, Castle, Mittal, & Lui, 2008; Kane, 2003). Kane argues that quality of life outcomes would significantly add to the understanding of how well long-term environments are meeting patients’ needs. Currently, quality of care outcomes in nursing homes are focused on assessments of delivery of care—specifically on reducing preventable events (e.g., falls) or illnesses (e.g., infections). These indicators of care are essential, but they do not address whether patients’ emotional, social, and physical needs are being met (Kane). It is well documented that there are negative health outcomes when patients’ emotional, social, and physical needs are not met (Degenholtz et al.; Idler & Benyamini, 1997). Quality of life outcomes have the potential to facilitate the planning of interventions with individual participants and to test features of a program or setting in relation to clients’ quality of life. Although the discussion of the importance of quality of life assessments as key outcome indicators has been focused on the nursing home settings, the argument is relevant to the ADS setting, which offers an alternative to institutional-based long-term care environments.

Measures of HRQOL allow assessment of health-related benefits that are relevant across clients with varied health and functional levels (Cook & Harman, 2008; Dabelko & Zimmerman 2008; Kaplan, 2003). Moreover, enhancement of quality of life is a goal for all people regardless of health status or disability. Generic HRQOL measures have been identified as important multidimensional outcomes measures for the treatment of chronic conditions and are increasingly recommended to assess the interaction of an intervention and recipients’ interpretation of outcomes (Baumeister, Balke, & Harter 2005; Norris et al., 2008; Werner et al., 2007). Stating the increase of quality of life and years of healthy life as their first goal, Healthy People 2010 defines HRQOL as a concept that reflects perceived physical and mental health and the ability to react to factors in the physical and social environments (Lawton, 1999; U.S. Department of Health and Human Services. HRQOL instruments focus on the consequences of chronic diseases based on patients’ perceptions and have been found to be responsive to clinically important changes (Haywood, Garratt, & Fitzpatrick, 2005). Moreover, HRQOL is associated with concurrent physical and mental health and future health events and is recognized as a better predictor of needed health care utilization and mortality than many objective measures of health (Degenholtz et al., 2008; Idler & Benyamini, 1997; Rumsfeld et al., 1999; Singh et al., 2005).

The hypothesis of this study is that ADHC participants will experience greater improvements in quality of life than comparable community-living older adults who do not participate in an ADHC. To this end, we compared changes in HRQOL over 1 year between clients who were in the ADHC environment for 2 or more days a week and a matched group of community-dwelling older adults who were not enrolled in an ADHC.

Design and Methods

Recruitment and Procedure

This 12-month prospective study was conducted between January 2001 and April 2004 in the San Francisco Bay Area. The study compared a convenience sample of newly enrolled participants from 16 ADHC programs in six counties of the San Francisco Bay Area with community-dwelling older adults from the same geographical area, who did not attend an ADHC but would have met eligibility criteria for ADHC attendance if referred.

Comparison group recruitment sites included a nonprofit provider of health and social services for seniors, an in-home social services provider, subsidized senior housing sites, and primary care physicians. They were chosen on the basis of their likelihood of having clients with similar socioeconomic status, age, level of functioning, health status, and health service utilization as ADHC clients. Potential comparison subjects were informed about the study by their social workers or primary care providers, who then provided research study staff with a list of interested candidates. Other comparison subjects self-referred after learning about the
study through fliers and letters. A research staff member conducted a telephone eligibility screen with interested study candidates to confirm eligibility and schedule the first home visit for informed consent procedure and baseline interviews.

ADHC centers (n = 16) who were members of the San Francisco Adult Day Services Network were invited to refer eligible participants. All invited ADHCs offered the same daily services provided by a multidisciplinary team of professionals, including nursing services, therapeutic activities (targeted to social, physical, and cognitive functioning), occupational therapy, speech therapy, dietician counseling, one full meal, personal care services, social services, and transportation to and from the center. ADHC staff informed new ADHC enrollees about the study within the first 2 weeks of enrollment. Participants who were interested were then contacted by study staff for a telephone eligibility interview. All participants who met study inclusion criteria were included in the study.

The ADHCs included in this study met the Title 22 ADHC licensing requirements, which stipulate that participants must have physician-prescribed treatment or rehabilitation needs, a mental or physical disability that affects daily living but does not require 24-hr care, and a high potential for further deterioration and probable institutionalization if ADHC services were not available. For those who qualify for Medicaid (California’s version is Medi-Cal) and qualify for ADHC services, Medicaid paid for the services (U.S. Department of Health and Human Services, 2005).

Data were collected at three measurement points: at baseline, 6 months, and 1 year after enrollment in the study. ADHC and comparison group subjects received $25 in cash after completion of each of the three interviews. The University of California, San Francisco granted human subjects approval.

Inclusion and Exclusion Criteria

Inclusion criteria for both groups were: age 55 or older; fluency in English, Cantonese, or Mandarin; insurance through Medicare, Medi-Cal, a Health Maintenance Organization, or private health insurance; dependency in at least one category of the Physical Self-Maintenance Scale (PSMS); ability to sit up for six hours at a time, and answer basic questions about his/her age; living situation; and functioning. Exclusion criteria were dependency in all seven PSMS categories; severe cognitive impairment defined as a score of 6 or more errors on the Short Portable Mental Status Questionnaire; a history of chronic schizophrenia; residence in a Board and Care home, a Residential Care Facility, an Assisted Living Facility, a nursing home, or homeless; enrollment in Adult Day Health Care, Adult Day Care, or Adult Day Support within the previous 6 months; and neurological or sensory deficits severe enough to interfere with the completion of study instruments.

ADHC subjects were newly enrolled in an ADHC program for 2 or more days per week. ADHC participants were excluded from participation if they had already attended the center for eight or more regular visits before study enrollment or if they attended the center for fewer than 2 days/week. Comparison subjects lived in the community and did not attend a day center or an ADHC within the prior 6 months.

Study Subjects

Between January 2001 and March 2003, 127 ADHC clients and 143 community-living older adults who did not attend ADHC were referred to the study. Of the 127 clients referred to the ADHC group, 34 did not meet the screening criteria, 13 refused, and for 5 clients the first interview could not be scheduled before their eighth day of ADHC attendance. Of the 143 clients referred to the comparison group, 49 did not meet the screening criteria, 13 refused, and for 2 the first interview could not be scheduled. Seventy-five were enrolled in the ADHC group and 79 in the comparison group. Among the 75 ADHC participants, 7 refused follow-up interviews, 6 were lost to follow-up, 5 died, and 57 completed 12-month interviews. Among the 79 comparison group participants, 4 refused follow-up interviews, 4 were lost to follow-up, 4 died, and 67 completed 12-month interviews (Table 1).

Data Collection

For ADHC participants, the first interview was conducted before their eighth day of ADHC attendance (typically within 3 weeks of enrollment in ADHC). Comparison subjects were not enrolled in a social program and thus were interviewed within 3 weeks of being identified as eligible and willing to participate in the study by referring centers and social workers. Interviews were conducted in participants’ homes by trained and experienced interviewers. Interviewers read the survey questions to the participants in participants’ primary language and participants responded either verbally or by
pointing to a response choice on a card printed in a large font. In the vast majority of cases, the ethnicity of the interviewers matched the ethnicity of the subject. In all cases, the interviewer spoke the primary language of the subjects (English, Cantonese, or Mandarin).

**Instruments**

Our primary outcomes measure was quality of life. In the context of long-term care services, quality of life has been conceptualized as a key indicator to assess if personal capabilities are aligned with environmental demands (Lawton, 1983). As indicators of participants’ physical, cognitive, and emotional capabilities, we assessed subjects’ comorbidity, cognitive status, mood, and ability to perform activity of daily living. We assessed participants’ demographics (marital status, household income, and living alone) as indicators of social and financial resources. Finally, we collected data on service utilization (including hours of home care) to assess subjects’ in-home environmental support.

Data for these outcomes were collected with the following instruments:

**HRQOL**, the primary outcome, was assessed using the Medical Outcomes Survey Form (SF 36), an internationally used multidimensional instrument of quality of life (Ware, Snow, Kosinski, & Ganden, 1993). We assessed the following domains physical functioning (extent to which health-related problems limit moderate or vigorous physical activities), role physical (extent to which physical health problems affect functioning in daily activities), social functioning (extent to which physical and emotional health problems interfere with social activities), role emotional (extent to which emotional problems limit the type and amount of regular daily activities), and mental health (lengths of time experiencing various mood states). Each of these domains is scored on a 0- to 100-point scale with higher scores reflecting better functional-related quality of life. Reliability coefficient for social functioning is .76 and for role physical and role emotional equaled or exceeded .80 (Ware et al., 1993).

**ADL** were assessed using the PSMS, which asks if the respondent needs no help, some help, or is completely dependent on others to perform ADL (e.g., going to the toilet, bathing, grooming, eating, transferring, or dressing). Higher scores reflect greater capacity to perform these tasks independently. Lawton and Brody (1969) determined the Guttman reproducibility coefficient for this scale to be .96.

**Cognitive status** was assessed using the Mini-Mental Status Examination (MMSE), a 30-point screening instrument for cognitive impairment with a test–retest reliability of 0.89. Possible scores range from 0 to 30, with higher scores indicating higher cognitive functioning (Folstein, Folstein, & McHugh, 1975; Tombaugh & McIntyre, 1992).

**Depression** was assessed using the 15-item self-reported Geriatric Depression Scale (GDS) with a reliability coefficient of .75 in functionally impaired community-dwelling older adults. A score of 6–11 points indicate mild to moderate depressed affect, and a score of 11–15 severe depressed affect. (Friedman, Heisel, & Delavan, 2005; Yesavage et al., 1982).

**Charlson Comorbidity Index** (CCI), which is based on weighted numbers and seriousness of comorbid conditions, was also determined. Developed with a cohort of 559 patients, the 1-year mortality rates for the different scores were “0,” 12%; “1–2,” 26%; “3–4,” 52%; and “greater than or equal to 5,” 85% (Charlson, Pompei, Ales, & MacKenzie, 1987).

**Statistical Analysis**

To compare ADHC and comparison group subjects in their baseline characteristics, chi-square tests were performed for categorical variables and t tests were computed to compare groups on continuous-valued variables. To assess whether temporal trends in quality of life domains significantly differed between ADHC and comparison group
subjects, repeated measures analysis of covariance (ANCOVA) models were computed for each quality of life domain. The repeated dependent variables were the quality of life scores used for each occasion (baseline, 6 months, and 1 year). The time variable indicated the assessment occasion. The independent variable reflected whether or not the subject participated in ADHC, and the time by group interaction assessed whether the trajectories for quality of life differed for the two groups over the three assessments. The reported quality of life scores were adjusted for baseline values of variables that differed at baseline between the two groups with a $p$ value of .10 or less, including whether or not the subject lived alone, number of comorbidities as assessed with the CCI, level of daily functioning as assessed with the PSMS, depressive symptoms as assessed by the GDS, and cognitive functioning as assessed by the MMSE. We conducted Mauchly’s test of sphericity to assess whether the error covariance matrix has variances and covariances close to zero, an assumption of the repeated measures ANCOVA model. The fit of the model was determined by computing an $F$ test that compares the ratio of the mean square for lack of fit with the mean square for pure error. The regression coefficients used to estimate the predicted score for each occasion are presented in Table 3 to describe the contribution of the covariates to the adjusted scores. For each outcome, we computed an $F$ test to assess the occasion by group interaction. A significant $F$ test would indicate that the groups had differential patterns of change in adjusted quality of life scores over occasions. The covariate-adjusted quality of life scores and the $p$ values for the time by group interaction are presented in Table 3. For those domains of quality of life that showed differential trends over time, we conducted secondary analyses to determine whether those changes could be explained by changes in level of daily functioning (PSMS), depressive symptoms (GDS), and cognitive functioning (MMSE). To accomplish this, the longitudinal generalized linear models were rerun using time-varying values rather than only baseline values of the PSMS, GDS, and MMSE.

**Results**

**Demographic Characteristics**

The ADHC and comparison group samples were well matched on demographic characteristics at the time of their enrollment in the study (Table 2). The mean ages of the two groups did not differ significantly. The mean age of the ADHC subjects was 77 years compared with 79 years for the comparison group subjects. The two groups also did not differ significantly in their ethnicity, whether they were born in the United States or the number of years they lived in the United States.

The two groups were nearly identical in their educational achievement with both groups on average completing 11 years of school. They reported similar household incomes with 71% of ADHC subjects reporting an annual household income of less than $15,000 compared with 72% of comparison group subjects. Although the number of widows was not significantly different (51% of ADHC subjects reported they were widowed compared with 43% of comparison group subjects), significantly more comparison group subjects (58%) reported living alone than did ADHC participants (33%). Subjects in the ADHC and the comparison group reported receiving paid care, but the two groups did not significantly differ in the amount of paid care received per month (Table 2).

At baseline, ADHC subjects had a greater number of depressive symptoms (4.4 vs. 3.3, $p = .06$), lower mental status scores (25.2 vs. 26.2, $p = .03$), and lower levels of physical functioning as measured by the PSMS (15.9 vs. 17.7, $p < .001$). Sixty percent of ADHC subjects reported two or more comorbidities compared with 47% of subjects in the comparison group ($p = .09$).

Diagnostic tests indicated that the assumption of sphericity was violated only for the physical functioning scale (Mauchly’s $W = .825$, chi-square $= 20.99$, $p < .01$). Therefore, we used the Huynh–Feldt Epsilon correction for assessing within-subjects effects for this quality of life domain. $F$ tests for lack of fit were computed for each quality of life outcome; those $F$ tests were nonsignificant revealing that the computed models fit the data. Table 3 reveals the regression coefficients for estimating the adjusted quality of life scores. Baseline depression scores contributed significantly to the prediction of baseline role physical, social functioning, role emotional, and mental health quality of life estimated scores, to 6-month quality of life scores for all domains and to 12-month social functioning and mental health estimated scores. The direction of the coefficients indicates that higher depression scores were associated with lower quality of life scores. Dependencies in ADL as determined by number of PSMS dependencies significantly contributed to the prediction of baseline,
6- and 12-month physical functioning quality of life estimated scores, and to 12-month social functioning and role emotional quality of life-estimated scores. The direction of the coefficients suggests that greater number of dependencies is associated with lower quality of life scores.

There were significantly different trends in the adjusted role physical scores across occasions for subjects who did and did not attend ADHC. Subjects who attended ADHC had steadily increasing role physical scores compared with comparison group subjects whose role physical scores steadily declined over the year (time by group interaction \( p = .01 \); Table 4). Similarly, there were significantly different trends in role emotional functioning between subjects who did and did not attend ADHC. Adjusted role emotional scores steadily increased over time for those subjects who attended ADHC but steadily declined for comparison group subjects (time by group interaction \( p = .02 \); Table 4). When these models were rerun using time-varying values of the PSMS, GDS, and MMSE, results were similar, suggesting that changes in daily functioning, depressed affect, and cognitive functioning do not explain the different trends between the two groups found for role physical and role emotional. There were no significant differences in trends for the two groups for physical functioning, social functioning, and mental health.

Discussion

This study presents evidence that ADHC attendance is associated with greater improvements in the quality of life domains role physical and role emotional compared with community living–matched controls. Specifically, after 1 year, ADHC participants reported that they had fewer problems with daily activities as a result of their physical or emotional impairments on everyday functioning in the year after enrollment in ADHC. In line with the P-E framework, a possible explanation of these results may be that the multilevel ADHC approach provides a social
Table 3. Regression Coefficients Across Occasions for Quality of Life Outcomes

<table>
<thead>
<tr>
<th>Quality of life domain</th>
<th>Baseline</th>
<th>6 months</th>
<th>12 months</th>
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<tbody>
<tr>
<td>Physical functioning</td>
<td></td>
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<tr>
<td>Baseline covariates</td>
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<td>Lives alone</td>
<td>0.76</td>
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<tr>
<td>MMSE</td>
<td>-0.17</td>
<td>0.73</td>
<td>1.48</td>
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<tr>
<td>GDS</td>
<td>-1.14</td>
<td>-1.87**</td>
<td>-1.54*</td>
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<tr>
<td>PSMS dependencies</td>
<td>-7.68***</td>
<td>-2.21***</td>
<td>-4.48**</td>
</tr>
<tr>
<td>ADHC vs. comparison</td>
<td>-4.41</td>
<td>0.26</td>
<td>-5.12</td>
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<tr>
<td>Role physical</td>
<td></td>
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<tr>
<td>Baseline covariates</td>
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<tr>
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<tr>
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<td>ADHC vs. comparison</td>
<td>0.42</td>
<td>-1.56</td>
<td>5.87</td>
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Notes: ADHC = Adult Day Health Center; GDS = Geriatric Depression Scale; MMSE = Mini-Mental Status Examination; PSMS = Physical Self-Maintenance Scale. ***p < .001. **p < .01. *p < .05.

and physical environment tailored to participants’ functional level in which participants are able to comfortably meet the demands of the environment. In contrast, individuals with functional limitations who do not attend ADHC may experience more problems in everyday functioning because they are predominantly in an environment with demands that exceed their competence level. Partial support for this explanation is provided by the secondary analyses that showed that changes in daily physical function-
model ADS programs on participants’ perceived HRQOL. However, there are several limitations to this study. Although we measured and controlled for many factors likely to predict HRQOL outcomes such as comorbidity, living situation, cognitive function, and physical function, it is possible that unmeasured differences between ADHC and comparison group subjects could explain outcome differences between the two groups. It is likely that the type and amount of help received at home was not completely captured by study methods. For example, we adjusted for living alone in the models, but this statistical adjustment may not completely capture how living alone may influence quality of life scores. A comparative study on characteristics (physical and mental health and social contacts) of ADS and home health care users found no difference with regard to subjects living alone, but ADS users reported having significantly more persons living with them than did home health care users (Dabelko & Balaswamy, 2000). One possible explanation why fewer participants lived alone may be because ADS is commonly used as a form of respite for family caregivers. More research is needed to better understand the role of individuals’ living situation on ADS utilization and outcomes. Furthermore, we only collected data on how many hours of home care comparison group subjects were receiving but not about other services. If comparison group subjects have received other services, the estimated increases in quality of life attributable to ADHC may be conservative.

A definitive examination of ADHC would require a randomized controlled trial (RCT). However, the few RCTs that have been conducted to evaluate outcomes of ADHC had mixed outcomes. A critical limitation of those studies is that the dose of ADHC was small, smaller than the minimum attendance that may be needed to demonstrate outcomes associated with ADHC attendance (Weissert et al., 1980). For example, an RCT conducted in Canadian day centers measured the impact of ADHC with a median number of visits of less than 1 day during a 13-week study period (Baumgarten et al., 2002). Thus, it is not clear if these studies optimally tested the potential impact of ADHC. No study described the association between the dose of ADHC attendance and outcomes. But Zarit and colleagues (1998) found that attendance of at least twice a week for at least 3 months improves outcomes for caregivers. In our study, an eligibility criterion was participation of 2 or more days. However, more research is needed to better understand the dose–outcomes relationship of ADHC attendance on participants.

Summary

In summary, ADHC participation was associated with perceived reductions in the extent to which participants’ physical and emotional health problems affected their regular daily activities, suggesting that ADHC is another option in the continuum of community-based long-term care that is associated with improved quality of life.
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**References**


