Home Health Care Management & Practice. 2019; 1-8; DOI: 10.1177/1084822318820531.

A Multidimensional Exercise Program in the Home for Older Adults Designed to Improve Function.

Whitney SL, Ellis J, Otis L, Marchetti G.

ABSTRACT

The purpose of this study was to determine whether there was difference in the OASIS (Outcome and Assessment Information Set) activities of daily living (ADL) items scores between the Safe Strides program and Safe Strides plus Zōntago program. Eight home care offices were selected for this prospective randomized quality improvement study where Safe Strides versus Safe Strides plus Zōntago were compared. Rehabilitation outcome OASIS ADL change scores were analyzed for 112 total patient care episodes. The Safe Strides + Zōntago mean total ADL score change and ADL change per visit were higher than the Safe Strides group. Differences in ADL outcomes in older adults undergoing home care provided by physical therapists and physical therapist assistants in the Safe Strides exercise program versus the Safe Strides plus Zōntago program were noted. The Safe Strides + Zōntago compared with Safe Strides alone improved patient functional outcomes as measured by the OASIS.

KEYWORDS

Older adult, strength, home care, exercise, motivational interview, frailty

Physiotherapy Theory & Practice *an International Journal of Physical Therapy*. 2017.
ISSN: 0959-3985 (Print) 1532-5040 (Online) Journal homepage: http://dx.doi.org/10.1080/09593985.2017.1360422.

Effect of home-based rehabilitation on activities of daily living and gait in older adults with heart failure at risk for falling: A retrospective cohort study

Faisal Y Asiri, PhD, PT[a,b], Gregory F Marchetti, PhD, PT[c], Jennifer L Ellis, PT, DPT, MS, GCS[d], Laurie Otis, PT, MBA, MHA[d], Patrick J Sparto, PhD, PT[a], Valerie Watzlaf, PhD, RHIA, FAHIMA[e], and Susan L Whitney, PhD, PT, NCS, ATC, FAPTA[a,f].

[a]Department of Physical Therapy, University of Pittsburgh, Pittsburgh, PA, USA; [b]Department of Rehabilitation Sciences, King Khalid University, Abha, Saudi Arabia; [c]Department of Physical Therapy, Duquesne University, Pittsburgh, PA, USA; [d]Gentiva Health Services Inc, Atlanta, GA, USA; [e]Department of Health Information Management, University of Pittsburgh, Pittsburgh, PA, USA; [f]King Saud University, Rehabilitation Research Chair, Riyadh, Saudi Arabia.

ABSTRACT

BACKGROUND AND PURPOSE:

The purpose of this study is to describe improvement in activities of daily living (ADL) and gait speed, and associated factors in subjects receiving home-based rehabilitation after hospital admission for heart failure.

METHODS AND ANALYSIS:

A total of 1,055 patients (mean age 82 ± 8 years SD) receiving post-admission home care services for heart failure. Subjects were included if they were referred for home-care rehabilitation after inpatient admission with ICD-9 code indicating heart failure at inpatient discharge, primary home care, or co-morbid diagnosis on admission Outcome and Assessment Information Set version-C (OASIS-C). Change in total ADL score was described and adjusted for significant baseline factors/covariates using a generalized linear model. Factors predictive of exceeding the ADL score Minimal Detectable Change (MDC) were identified with multiple variable logistic regression.

RESULTS:

A total of 1,055 patients (mean age 82 ± 8 years SD) receiving post-admission home care services for heart failure. Subjects were included if they were referred for home-care rehabilitation after inpatient admission with ICD-9 code indicating heart failure at inpatient discharge, primary home care, or co-morbid diagnosis on admission Outcome and Assessment Information Set version-C (OASIS-C). Change in total ADL score was described and adjusted for significant baseline factors/covariates using a generalized linear model. Factors predictive of exceeding the ADL score Minimal Detectable Change (MDC) were identified with multiple variable logistic regression.

CONCLUSIONS:

Patients with heart failure receiving home-based rehabilitation services make significant improvements in ADL function and gait performance. Greater ADL improvements are associated with younger age, faster gait speed at baseline, and greater impairment of baseline ADL scores. Age, baseline gait speed, and ADL composite score are significantly related to making a change beyond measurement error in ADL change score.

Home Healthc Now. 2015 May; 33(5):265-74.

Outcomes of usual versus a specialized falls and balance program in the home.

Whitney SL1, Marchetti GF, Ellis JL, Otis L.

ABSTRACT

A retrospective cohort study with adjustment for baseline group differences was conducted to determine if there was a difference in Outcome and Information Data Set (OASIS-C) activities of daily living (ADL) outcomes as well as the duration and number of home care visits between usual home care rehabilitation services and a home care rehabilitation team that was specially trained in falls identification and prevention. Data from adult Medicare beneficiaries who were treated in a large multistate home care practice with at least one visit by a physical therapist were retrieved retrospectively for analysis (n = 3,907 records). Patients identified as having multiple fall risk factors based on OASIS-C assessment undergoing a specialized care program demonstrated greater improvements in mean total ADL scores after home healthcare rehabilitation services compared with subjects at fall risk receiving usual care. Interdisciplinary care delivered by a healthcare team specially trained in fall prevention appeared to decrease the number of home care visits and resulted in improved ADL OASIS-C outcome scores after adjustment for potential confounders.

J Stroke Cerebrovasc Dis. 2014 Aug;23(7):1856-64.

Predictors of functional and gait outcomes for persons poststroke undergoing home-based rehabilitation.

Asiri FY1, Marchetti GF2, Ellis JL3, Otis L3, Sparto PJ4, Watzlaf V5, Whitney SL6.

ABSTRACT

BACKGROUND:

The literature on the impact of home-based rehabilitation on functional outcomes for patients after stroke is limited. The purpose of this study was to describe the outcomes of home-based rehabilitation (HBR) on functional and gait performance for patients after stroke and associated factors that contribute to better outcomes after an episode of care.

METHODS:

The nature of the study design was retrospective and the settings used were home care services. The total number of subjects receiving home care services after stroke was 213 (mean age 76.5 ± 9 years, 51% female). Treatment records for patients receiving HBR in 2010 were reviewed at the start of care and discharge. The primary outcome measure was a change in a gait speed and activities of daily living (ADL) performance between admission and discharge from home health care services. The composite score to calculate overall functional status (Outcome Information and Assessment Set-version C [OASIS-C]) was used. Mean change in ADL and gait scores and factors predictive of improvement were identified using an analysis of covariance and multivariate linear models. The main outcome measures were change in the OASIS-C composite scores and gait speed.

RESULTS:

After adjustment for age and ADL score at the start of care, discharge from skilled nursing or long-term facilities, presence of confusion most of the times, cognitive impairment, and memory deficits were negatively associated with an improvement in functional scores (ADL). Living in congregate facilities was also negatively associated with an improvement in gait speed. The best multivariate model included age, baseline ADL composite scores, confusion status, and gait speed at the start of care, which predicted 41% of the variance in ADL score changes over the course of intervention.

CONCLUSIONS:

Gait speed and ADL scores at the start of care had largest influence on functional and gait improvement. Type of discharge facility, confusion status, and living arrangement had effects on HBR outcomes for stroke survivors.

J Rehabil Res Dev. 2013;50(8):1089-98.

Relationship between cognition and gait performance in older adults receiving physical therapy interventions in the home.

Whitney SL[1], Marchetti GF, Ellis J, Otis L, Asiri F, Alghadir A.

ABSTRACT

Persons undergoing physical therapy home services often have difficulty with mobility and gait. The purpose of this study was to determine whether there was a relationship between gait and a rating of cognitive functioning in persons undergoing home-care physical therapy services. Patients over the age of 65 (n = 11,601) seen by a home-care agency between 2007 and 2008 were included in the retrospective analysis, and 10,953 (mean +/- standard deviation age 83.2 +/- 7.1; 31%) met the criteria of being able to ambulate independently or with an assistive device. All patients attempted to perform the modified Clinical Test of Sensory Integration and Balance plus either the Performance Oriented Measurement Assessment (POMA) or the Dynamic Gait Index (DGI). Mental function was scored as part of the Outcome and Assessment Information Set. A multivariate model with adjustment for age and sex identified gait performance as measured by the DGI to be independently associated with the likelihood that a patient required cognitive prompting (p = 0.03). Both the DGI and POMA scores were independently associated with requiring assistance/dependence with cognitive tasks. There was a strong relationship between cognition and gait performance in persons undergoing physical therapy interventions in the home. Changes in gait may be related to cognitive decline.

KEYWORDS

Outcome and Assessment Information Set (OASIS); balance; cognition; falls; gait; home care; measurement; older adults; physical therapy; residence

2013

A Classification Regression Tree Analysis to Reduce Balance Impairments and Falls in the Older population: Impact on Resource Utilization and Clinical Decision- Making in USA Rehabilitation Service Delivery

Lucinda Pfalzer, PT, PhD, FACSM, FAPTA Physical Therapy Department, University of Michigan-Flint - Flint, Michigan 48502, USA
Amy Yorke, PT, MPT, NCS Physical Therapy Department, University of Michigan-Flint Flint, Michigan 48502, USA
Jennifer Ellis, PT, DPT, MS, GCS Gentiva® Health Services, Atlanta, Georgia 30339, USA
Laurie Otis, PT, MBA, MHA, GCS Gentiva® Health Services, Atlanta, Georgia 30339, USA and
Bridget Gorski, BS Physical Therapy Department, University of Michigan-Flint Flint, Michigan 48502, USA

ABSTRACT

BACKGROUND/PURPOSE

Over 1/3 of adults over age 65 experiences at least one fall each year. This pilot report uses a classification regression tree analysis (CART) to model the outcomes for balance/risk of falls from the Gentiva® Safe Strides® Program (SSP).

METHODS/OUTCOMES

Safe Strides (SSP) is a home-based balance/fall prevention program designed to treat root causes of a patient's balance problems. Analysis starts with the cohort of patients enrolled in SSP having a Berg Balance Assessment completed (n=165) and sequentially divides it into subgroups, creating a regression tree model. Descriptive statistics were calculated to summarize demographics, self- reported pain measure, foot sensation, and initial exam and discharge scores for tests of impaired balance/risk of falls.

RESULTS/DISCUSSION

Average (+SD) age for fallers was 82.6 (+8.3) years with 39.8% (n=37) male and 60.2% (n=56) females, and 77.3 (+10.1) years for non-fallers with 43.5% (n=30) males and 56.5% (n=39) females, respectively. 43% of patients demonstrated improved balance on discharge from home health. The CART yielded a tree model after 12 partitions. The best discriminating variable was BBS score of < or > 33 on initial examination. Conclusion: This pilot case analysis enables Gentiva® and policy makers to improve efficiency and effectiveness of service delivery.

KEYWORDS

Balance, falls, CART analysis, clinical decision making, physical therapy

J Geriatr Phys Ther. 2013 Jan-Mar;36(1):3-12.

Improvements in balance in older adults engaged in specialized home care falls prevention program.

Whitney SL[1], Marchetti GF, Ellis JL, Otis L.

ABSTRACT

BACKGROUND AND PURPOSE

To determine if persons older than 65 years receiving a combination of physical therapy, occupational therapy, speech, or nursing interventions in their home demonstrated changes in gait/balance function after an episode of home care services.

METHODS

Charts from 11 667 persons who were at risk for falling and who were participating in an exercise program in the home were included.

STUDY DESIGN

Data were retrieved from the Outcome and Assessment Information Set, Version B, and the computerized database of physical therapist-collected outcome data. Recorded physical therapist-data may have included a neuropathic pain rating, the Berg Balance Scale (BBS), the Performance Oriented Measurement Assessment (POMA), the Dynamic Gait Index (DGI), and the modified Clinical Test of Sensory Integration and Balance (mCTSIB).

DATA ANALYSIS

Data were extracted by an honest broker and were analyzed. Mean (SD) change in each performance test and the percentage of participants in the total sample and in the 9 age/health condition strata that exceeded the minimum detectable change (MDC) for each gait/balance measure were described. The value of MDC95 describes the amount of true change in participant status beyond measurement error with 95% certainty.

RESULTS

The gait/balance measures demonstrated MDCs ranging between 68% and 91% for the study sample. Mean (SD) of improvement on the BBS was 12 (8) points, with 88% of all participants exceeding the BBS MDC95 value of 5 points. Mean (SD) of improvement in gait/balance performance as measured by the POMA was 8 (4) points, with 91% of all participants exceeding the POMA MDC95 value of 3 points. Among all patients, mean (SD) of improvement on the DGI was 7 (4) points with 91% of all participants exceeding the DGI MDC95 value of 2 points by discharge. At admission, the median number of mCTSIB conditions that could be completed was 1 and the median number of completed conditions on the mCTSIB increased to 3 at discharge, with 81% of all participants demonstrating improvement.

CONCLUSION

On the basis of established criteria, participants seemed to make clinically meaningful gains after the home care episode of care.