



SilverSneakers Outcomes: Published Evidence of Program Impact

October 2019

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HEALTH

Introduction

The SilverSneakers® fitness program is an innovative well-being improvement program helping Medicare beneficiaries stay physically active and socially engaged. The program includes a fitness center membership and specialized classes that foster social interaction among members and encourage them to live healthy, active lifestyles. Tivity Health™ has compiled a series of longitudinal, peer-reviewed studies that consistently document improvement in individual well-being and reduction in medical costs for Medicare beneficiaries who participate in SilverSneakers.

Tivity Health strives to ensure that SilverSneakers is accessible and appealing to Medicare beneficiaries regardless of their current health status and whether or not they are accustomed to exercise. Program coordinators are trained to foster an environment that is welcoming and accommodating to differing levels of fitness and mobility. In fact, two-thirds of SilverSneakers participants have multiple chronic conditions and almost half report no previous fitness center membership. A key focus of several of the studies in this volume is how well the program works for beneficiaries with chronic conditions such as diabetes and depression. In some cases, the findings demonstrate that the greatest opportunities to improve in health and reduce costs lies with beneficiaries who have these conditions.

Despite the conventional wisdom that exercise is good for you, many have questioned whether a fitness program designed for Medicare beneficiaries really can improve well-being and reduce costs. Tivity Health and SilverSneakers have a proven record of doing just that.



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Increasing Exercise Frequency is Associated with Health and Quality-of-Life Benefits for Older Adults

Kell, KP, Rula, EY

Quality of Life Research, 2019

Abstract

Purpose: To evaluate whether health-related quality-of-life measures can be improved in a senior population by increasing participation in an exercise program.

Methods: The study involved a nationwide sample of adults aged 65 and older (mean age 73.2 in first study year) who participated in the SilverSneakers fitness program between 2010 and 2016. We analyzed data from 7 years of program participation records and annual participant surveys. Study members completed ≥ 2 annual surveys ($n = 46,564$). Participation frequency change was measured by average visits per week (AVPW) to a fitness center from the initial survey year to follow-up years. Quality-of-life measures included the 12-Item Short Form Health Survey (SF-12), Self-Rated Health, and BRFSS Healthy Days measures. Longitudinal analyses evaluated whether an increase in visit frequency among active members of SilverSneakers was associated with change in quality-of-life measures, controlling for age and gender.

Results: Participants with more frequent visits (higher AVPW) had better SF-12 Physical and Mental Component Scores, Self-Rated Health Status, and fewer physically and mentally unhealthy days ($p < 0.001$ for all measures); furthermore, participants who increased AVPW longitudinally saw improvements in all outcome measures ($p < 0.001$).

Conclusion: SilverSneakers participation frequency is associated with higher quality of life for seniors.

Key Takeaways:

- This 7-year longitudinal study of nearly 50,000 people tested whether increasing participation in SilverSneakers impacted 5 health-related quality of life measures in the domains of physical and mental health.
- More frequent SilverSneakers visits is associated with higher physical and mental health for members across all study measures.
- SilverSneakers members who increased their average number of SilverSneakers visits per week over time had significant improvements in self-rated health, increased SF-12 scores for physical and mental health, and a decreased number of unhealthy days.
- For example, an increase of less than 1 visit per week on average to at least 3 visits per week translated to a reduction of more than 1.4 physically unhealthy days and 0.5 mentally unhealthy days per month.
- Efforts to increase SilverSneakers participation can significantly improve health among seniors over time.



PDF available at:

<https://link.springer.com/article/10.1007%2Fs1136-019-02264-z>

Reducing Isolation and Loneliness Through Membership in a Fitness Program for Older Adults: Implications for Health

Brady, S, D'Ambrosio, LA, Felts, A, Rula, EY, Kell, KP, Coughlin, JF
Journal of Applied Gerontology, 2018

Abstract

Objectives: To explore the effects of membership in a fitness program for older adults on social isolation, loneliness, and health.

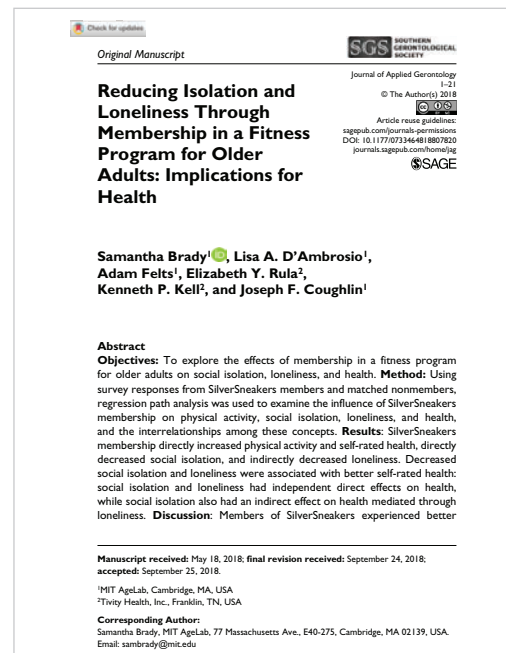
Method: Using survey responses from SilverSneakers members and matched nonmembers, regression path analysis was used to examine the influence of SilverSneakers membership on physical activity, social isolation, loneliness, and health, and the interrelationships among these concepts.

Results: SilverSneakers membership directly increased physical activity and self-rated health, directly decreased social isolation, and indirectly decreased loneliness. Decreased social isolation and loneliness were associated with better self-rated health; social isolation and loneliness had independent direct effects on health, while social isolation also had an indirect effect on health mediated through loneliness.

Discussion: Members of SilverSneakers experienced better health through increased physical activity, reduced social isolation, and reduced loneliness. Future research should explore independent effects of social isolation and loneliness on health and the mechanisms by which membership reduces social isolation and loneliness.

Key Takeaways:

- Together, Tivity Health and the MIT AgeLab tested the impact of SilverSneakers on social isolation, a modern epidemic that increases risk of premature death by 29% -- more than obesity and as much as smoking 15 cigarettes per day.
- The study of over 3,000 Medicare Advantage members compared SilverSneakers participants to a control group on their physical activity, social isolation, loneliness, and health status.
- SilverSneakers participants were significantly less socially isolated and lonely than the control group.
 - 20% fewer SilverSneakers members suffered from social isolation
 - 25% fewer SilverSneakers members suffered from loneliness
- The social benefits of the program magnified the health benefits. The reductions in social isolation and loneliness had a positive impact on health above and beyond the direct health benefits of the higher physical activity among the SilverSneakers group.



PDF available at:

<https://journals.sagepub.com/doi/pdf/10.1177/0733464818807820>

Health Care Cost Savings Over a One-Year Period for SilverSneakers Group Exercise Participants

Crossman, AF

Health Behavior and Policy Review, 2018

Abstract

Objectives: The SilverSneakers Fitness program has been shown to decrease the healthcare costs of the members who participate. The purpose of this study is to determine if there are healthcare cost savings differences between the SilverSneakers participants who solely attend the SilverSneakers group classes and a matched control group of non-enrollees.

Methods: A variable optimal matching procedure was used to match SilverSneakers class participants to similar non-enrollees based on sex, age, health plan, risk score or chronic conditions, and baseline costs. Healthcare cost differences from year one (baseline) to year two (follow-up) were then compared between participants and the control group. 149 SilverSneakers participants and 149 matched controls were included in the study.

Results: Program participants who solely attend the SilverSneakers group classes had a significant one-year cost savings relative to their comparison group. Class attendees' healthcare costs during the one-year follow-up period were less than one-quarter of the healthcare costs of their matched control group, averaging \$2,144 in annual savings per participant.

Conclusions: SilverSneakers group exercise classes play a significant role in reducing healthcare costs among participants. These results underscore the need to offer age-appropriate fitness classes in order to get older adults more active using a safe and effective format.

Keywords: SilverSneakers, healthcare costs, group exercise classes, older adult fitness

Key Takeaways:

- SilverSneakers group exercise classes can help control healthcare costs for older adults.
- SilverSneakers class attendees had \$2,144 lower average healthcare costs than matched non-enrollees after only a single year in the program.
- Higher class participation was associated with greater savings. Each additional SilverSneakers group exercise class attended led to an additional \$22 decrease in healthcare costs during their first year in the program.

Healthcare Cost Savings over a One-year Period for SilverSneakers Group Exercise Participants

Ashley Fenzl Crossman, PhD

Objectives: The objective of this study was to determine if there are healthcare cost savings differences between SilverSneakers participants who attend the SilverSneakers group classes and health plan members not enrolled in SilverSneakers. **Methods:** Healthcare cost differences from baseline to follow-up were compared between SilverSneakers participants and a matched control group, each with 149 participants. **Results:** Program participants who solely attended the SilverSneakers group classes had a statistically significant one-year cost savings relative to their comparison group ($t = 2.15, p = .0321$). A statistically significant dose response of SilverSneakers classes was also present ($\beta = -22.05, p = .0219$). **Conclusions:** SilverSneakers group exercise classes play a significant role in reducing healthcare costs among participants.

Key words: SilverSneakers; healthcare costs; group exercise classes; adult fitness; physical fitness
Health Behav Policy Rev. 2018;5(1):40-46
DOI: <https://doi.org/10.14483/HBPR.5.1.4>

In general, healthcare expenditures increase with age. In 2011, the average per capita Medicare spending more than doubled between age 70 (\$7,566) and age 96 (\$16,145). This is due in part to the high cost of end-of-life care as well as an increase in chronic conditions and the costs associated with those conditions.¹

Currently, the United States (US) is undergoing a huge shift towards an older demographic, and with that comes a rapid increase in the healthcare costs accounted for by seniors. The US Census Bureau estimates that between 2010 and 2050, the US population of adults ages 65 and older will almost double, the population of those 80 and older will triple, and the population of those in their 90s and 100s will quadruple. This has important implications for future Medicare spending because beneficiaries over 80 years of age account for a disproportionate share of Medicare expenses.¹

This growing older adult population creates pressure on the Medicare program and Medicare Advantage health plans to look for new ways to decrease costs. The SilverSneakers Fitness program is offered to health plans to help combat the negative effects and increased healthcare costs that often come with aging. The SilverSneakers Fitness program provides Medicare Advantage enrollees access to fitness facilities at over 13,000 locations across the US. Participants can use all basic amenities at the fitness centers in addition to taking SilverSneakers classes, which are designed specifically for active older adults and led by certified instructors.

Several studies have demonstrated favorable health and financial impacts of fitness-based wellness programs, such as SilverSneakers, that have been developed for seniors. For instance, Nguyen et al² found that SilverSneakers participants had significantly fewer hospital admissions and lower healthcare costs after 2 years. Other studies of the SilverSneakers Fitness program found that participation was significantly associated with lower risk of depression and increased participation was associated with a greater decrease in healthcare costs for those with diabetes when compared to those who exercised less.^{3,4} Similarly, Ackermann et al⁵ found that participants in an HMO-based senior physical activity program had annual adjusted costs that were \$1186 lower than nonparticipants in the program's second year. Another study of Medicare-eligible adults showed that members who participated in a community-based exercise program one or more times per week had total healthcare costs

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Ashley Fenzl Crossman, Tivity Health, Advanced Analytics, Chandler, AZ
Correspondence to: Crossman; afcz@crossmanconsultants.com

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<http://ingentaconnect.com/contentone/psp/hbpr/00000001/00000005/2018/art00004>

Impact of a Senior Fitness Program on Measures of Physical and Emotional Health and Functioning

Hamar, B, Coberley, C, Pope, JE, Rula, EY

Population Health Management, 2013

Abstract

The SilverSneakers® fitness program is a health plan benefit for Medicare beneficiaries that provides older adults with fitness center membership, customized group exercise classes, and a supportive social environment that promotes socialization among participants. This study evaluated the impact of the SilverSneakers program on the physical and emotional health and activities of daily living (ADL). A quasi-experimental retrospective analysis compared annual survey responses from SilverSneakers members (Treatment N=5,586) to a matched national random sample of Medicare Advantage Organization beneficiaries (Comparison N=22,344) in the Cohort 10 Medicare Health Outcomes Survey. Matching was performed based on 6 demographic and 6 disease status variables. 2007 and 2009 survey responses were evaluated using categorical and logistic regression analysis. The Treatment group presented significantly better physical and emotional health and lower impairment in both 2007 and 2009, less impairment for four of six ADLs in 2007 and all six in 2009, and a higher average number of days of good health within the prior month for both years. Three-year longitudinal analyses indicated a significantly more favorable Treatment group trend for nearly all measures of health and ADLs. Members exercising less frequently had poorer health and functioning. Overall, participation in the SilverSneakers program was associated with more favorable overall physical and social/emotional health status and fewer activity impairments, suggesting that the provision of senior-oriented group fitness programs may be a valuable approach to improve quality of life and reduce the burden associated with declining health and functioning as older adults age.

Key Takeaways:

- Participation in SilverSneakers is associated with better physical and emotional health, higher functioning, and lower disability among seniors across many measures
- Over three years, SilverSneakers members demonstrate better trends than similar seniors with respect to overall health status, health status change, emotional health, social limitations due to health, overall disability level, and in ability to perform all 6 measured activities of daily living
- Greater frequency of exercise is associated with significantly better outcomes among SilverSneakers members
- The provision of SilverSneakers can serve to improve quality of life and reduce the burden associated with declining health and functioning as older adults age

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TYPE: ORIGINAL ARTICLE

Original Article

Impact of a Senior Fitness Program on Measures of Physical and Emotional Health and Functioning

Brent Hamar, DDS, MPH, Center Coberley, PhD, James E. Pope, MD, and Elizabeth Y. Rula, PhD

Abstract

The SilverSneakers fitness program is a health plan benefit for Medicare beneficiaries that provides older adults with fitness center membership, customized group exercise classes, and a supportive social environment that promotes socialization among participants. This study evaluated the impact of the SilverSneakers program on physical and emotional health and activities of daily living (ADLs). A quasi-experimental retrospective analysis compared annual survey responses from SilverSneakers members (treatment N=5586) to a matched national random sample of Medicare Advantage organization beneficiaries (comparison N=22,344) in Cohort 10 of the Medicare Health Outcomes Survey. Matching was performed based on six demographic and six disease status variables. Survey responses from 2007 and 2009 were evaluated using categorical and logistic regression analysis. The treatment group showed significantly better physical and emotional health and lower impairment in both 2007 and 2009, less impairment for four of six ADLs in 2007, and all six in 2009, and a higher average number of days of good health within the prior month for both years. Three-year longitudinal analyses indicated a significantly more favorable survey response trend for the treatment group for nearly all measures of health and ADLs. Members who exercised less frequently had poorer health and functioning. Overall, participation in the SilverSneakers program was associated with more favorable overall physical and social/emotional health status and fewer activity impairments, suggesting that the provision of senior-oriented group fitness programs may be a valuable approach to improve quality of life and reduce the burden associated with declining health and functioning as older adults age. (*Population Health Management* 2013;16:xxx-xxx)

Introduction

THE AMERICAN POPULATION is undergoing a dramatic shift toward an older demographic, and the associated changes in the size and makeup of the US Medicare program are rapidly increasing federal health care spending accounted for by seniors in our society. In 2010, there were nearly 40 million adults age 65 and older covered by Medicare, a number projected to reach 79 million by 2030.^{1,2} Overall US health care spending is projected to rise from \$2.7 trillion in 2011 to \$4.8 trillion by 2020;³ spending on Medicare is projected to increase 65% per year from 2009 to 2019.⁴ The aging of the baby boomer generation and the current economic environment are creating tremendous pressure on the fiscal viability of Medicare as it currently stands. The most recent estimates (2011) are that the Medicare Hospital Insurance Trust Fund will be depleted in 2024, 5 years earlier than was reported in the year 2010 congressional report.⁵

Chronic disease and associated comorbidities also are taking an ever-increasing role in driving Medicare spending. Nearly 91% of people age 65 and older have one or more chronic conditions, more than half of this population are treated for five or more conditions and this group accounts for a disproportionate amount of spending (79%).⁶ Approximately one-fourth of people with chronic conditions have one or more limitations in activities of daily living (ADLs), such as walking, bathing, and dressing, and their health care spending, often more than doubles in cost.^{7,8} Surprisingly, most people with activity limitations are Medicare members.⁹

In addition to disease-related morbidity and functional decline, seniors often face loneliness, social isolation, and depression, which can have additional negative influences on their health and overall quality of life. These factors working in combination with chronic conditions and impairments can seriously compromise seniors' health and well-being. Social interactions have been shown to be associated with positive physiological benefits that can promote better health outcomes.¹⁰ A study conducted on the importance of out-of-bed health in myocardial infarction patients

Center for Health Research, Healthways, Inc., Franklin, Tennessee

PDF available at:

<http://online.liebertpub.com/doi/pdfplus/10.1089/pop.2012.0111>

Managed-Medicare Health Club Benefit and Reduced Health Care Costs Among Older Adults

Nguyen, HQ, Ackermann, RT, Maciejewski, M, Berke, E, Patrick, M, Williams, B, LoGerfo, JP
Preventing Chronic Disease, 2008

Abstract

Introduction: Our study was undertaken to determine the association between use of a health plan-sponsored health club benefit by older adults and total health care costs over 2 years.

Methods: This retrospective cohort study used administrative and claims data from a Medicare Advantage plan. Participants (n = 4,766) were enrolled in the plan for at least 1 year before participating in the plan-sponsored health club benefit (SilverSneakers®). Controls (n = 9,035) were matched to participants by age and sex according to the index date of SilverSneakers enrollment. Multivariate regression models were used to estimate health care use and costs and to make subgroup comparisons according to frequency of health club visits.

Results: Compared with controls, SilverSneakers participants were older and more likely to be male, used more preventive services, and had higher total health care costs at baseline. Adjusted total health care costs for SilverSneakers participants and controls did not differ significantly in year 1. By year 2, compared with controls, SilverSneakers participants had significantly fewer inpatient admissions (-2.3%, 95% confidence interval, -3.3% to -1.2%; P <.001) and lower total health care costs (-\$500; 95% confidence interval, -\$892 to -\$106; P = .01). SilverSneakers participants who averaged at least two health club visits per week over 2 years incurred at least \$1,252 (95% confidence interval, -\$1,937 to -\$567; P <.001) less in health care costs in year 2 than did those who visited on average less than once per week.

Conclusion: Regular use of a health club benefit was associated with slower growth in total health care costs in the long term but not in the short term. These findings warrant additional prospective investigations to determine whether policies to offer health club benefits and promote physical activity among older adults can reduce increases in health care costs.

Key Takeaways:

- SilverSneakers participation resulted in reduced cost trends. Although SilverSneakers participants had higher healthcare costs at baseline, their costs were the same as non-participants by year one and were significantly lower (average, -\$500) in year two
- SilverSneakers participants had significantly fewer inpatient hospital admissions in the second year
- Greater participation was associated with higher savings—participants who averaged two or more SilverSneakers health club visits per week had average savings of \$1,252 in year two compared to those with fewer than one visit per week

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Managed-Medicare Health Club Benefit and Reduced Health Care Costs Among Older Adults

Huong Q. Nguyen, PhD, Ronald T. Ackermann, MD, MPH, Matthew Maciejewski, PhD, Ethan Berke, MD, MPH, Marsha Patrick, PhD, MHA, CHE, Barbara Williams, PhD, James P. LoGerfo, MD, MPH

Suggested citation for this article: Nguyen HQ, Ackermann RT, Maciejewski M, Berke E, Patrick M, Williams B, et al. Managed-Medicare health club benefit and reduced health care costs among older adults. *Prev Chronic Dis* 2008;5(1):http://www.cdc.gov/pccd/issues/2008/jan/07_0148.htm. Accessed [date].

PEER REVIEWED

Abstract

Introduction
Our study was undertaken to determine the association between use of a health plan-sponsored health club benefit by older adults and total health care costs over 2 years.

Methods
This retrospective cohort study used administrative and claims data from a Medicare Advantage plan. Participants (n = 4,766) were enrolled in the plan for at least 1 year before participating in the plan-sponsored health club benefit (SilverSneakers). Controls (n = 9,035) were matched to participants by age and sex according to the index date of SilverSneakers enrollment. Multivariate regression models were used to estimate health care use and costs and to make subgroup comparisons according to frequency of health club visits.

Results
Compared with controls, Silver Sneakers participants were older and more likely to be male, used more preventive services, and had higher total health care costs at baseline. Adjusted total health care costs for Silver Sneakers participants and controls did not differ significantly in year 1. By year 2, compared with controls, Silver Sneakers participants had significantly fewer inpatient admissions (-2.3%, 95% confidence interval, -3.3% to -1.2%; P <.001) and lower total health care costs (-\$500; 95% confidence interval, -\$892 to -\$106; P = .01). Silver Sneakers participants who averaged at least two health club visits per week over 2 years incurred at least \$1,252 (95% confidence interval, -\$1,937 to -\$567; P <.001) less in health care costs in year 2 than did those who visited on average less than once per week.

Conclusion
Regular use of a health club benefit was associated with slower growth in total health care costs in the long term but not in the short term. These findings warrant additional prospective investigations to determine whether policies to offer health club benefits and promote physical activity among older adults can reduce increases in health care costs.

Introduction
Despite the many benefits of physical activity, including better health, improved functioning, increased quality of life, and reduced mortality (1-5), approximately 25% of U.S. adults aged 65 or older engage in less than 10 minutes of moderate- or vigorous-intensity activities per week (5). Physical inactivity places an economic burden on the health care system and society as a whole (6-8). A longitudinal cohort study of people aged 64 to 69 showed that 2-year total health care expenditures were 7% lower for those who engaged in regular vigorous activity than

The opinions expressed by authors contributing to this journal do not necessarily reflect the opinions of the U.S. Department of Health and Human Services, the Centers for Disease Control and Prevention, or the National Physical Activity Promotion. Use of trade names is for identification only, and does not imply endorsement by any of the agencies named.

www.cdc.gov/pccd/issues/2008/jan/07_0148.htm • Centers for Disease Control and Prevention 1

PDF available at:

https://www.cdc.gov/pccd/issues/2008/jan/07_0148.htm

Health Care Use and Costs Associated With Use of a Health Club Membership Benefit in Older Adults with Diabetes

Nguyen, HQ, Maciejewski, M, Gao, S, Lin, E, Williams, B, LoGerfo, JP
Diabetes Care, 2008

Abstract

Objective: The purpose of this study was to determine whether elective use of a health plan-sponsored health club membership had an impact on health care use and costs among older adults with diabetes.

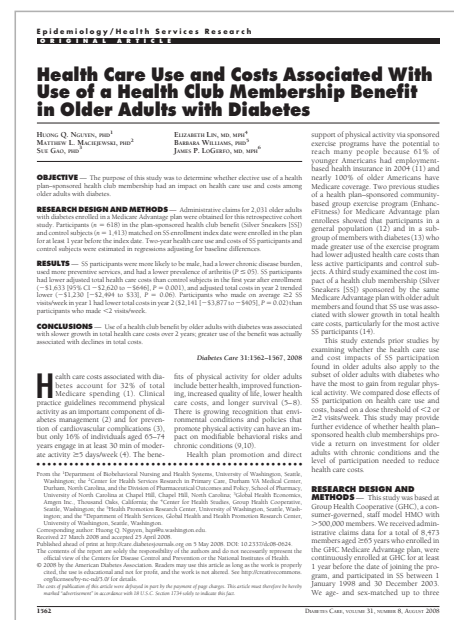
Research and Methods: Administrative claims for 2,031 older adults with diabetes enrolled in a Medicare Advantage plan were obtained for this retrospective cohort study. Participants (n=618) in the plan-sponsored health club benefit (SilverSneakers®) and control subjects (n=1,413) matched on SilverSneakers enrollment index date were enrolled in the plan for at least 1 year before the index date. Two-year health care use and costs of SilverSneakers participants and control subjects were estimated in regressions adjusting for baseline differences.

Results: SilverSneakers participants were more likely to be male, had a lower chronic disease burden, used more preventive services, and had a lower prevalence of arthritis ($P \leq 0.05$). SilverSneakers participants had lower adjusted total health care costs than control subjects in the first year after enrollment (\$1,633 [95% CI \$2,620 to \$646], $P=0.001$), and adjusted total costs in year 2 trended lower (\$1,230 [\$2,494 to \$33], $P=0.06$). Participants who made on average ≥ 2 SilverSneakers visits/week in year 1 had lower total costs in year 2 (\$2,141 [-\$3,877 to -\$405], $P=0.02$) than participants who made <2 visits/week.

Conclusions: Use of a health club benefit by older adults with diabetes was associated with slower growth in total health care costs over 2 years; greater use of the benefit was actually associated with declines in total costs.

Key Takeaways:

- SilverSneakers can help control health care costs for older adults with diabetes
- SilverSneakers participants with diabetes had \$1,633 lower average health care costs than the control group after one year in the program
- Year two costs were \$1,230 less for SilverSneakers participants than the control group and significantly fewer participants were hospitalized
- Higher program participation was associated with greater savings. Participants averaging two or more fitness center visits declined in cost over two years and had savings of \$2,141 in year two relative to those with lower participation



Depression and Use of a Health Plan–Sponsored Physical Activity Program by Older Adults

Nguyen, HQ, Koepsell, T, Unützer, J, Larson, E, LoGerfo, JP
American Journal of Preventive Medicine, 2008

Abstract

Background: The purpose of this study was to determine the associations between depression and the likelihood of enrollment in a health plan–sponsored physical activity program and pattern of program participation over 2 years; a secondary aim was to examine the association between participation dose and depression risk. There are no published studies on how depression influences participation in health plan–sponsored physical activity programs and how participation affects depression risk in older adults in nonresearch settings.

Methods: This study used administrative data from a Medicare Advantage plan. Participants (n4,766) were enrolled in the plan for at least 1 year prior to participating in the plan–sponsored health club benefit (SilverSneakers®). Controls were age- and gender–matched to participants (n9,035). Members were identified as having depression based on ICD-9-CM codes. Multivariate regression and generalized estimating equations models were used. Data were collected between 1998 and 2003 and analyzed in 2008.

Results: Members who had a history of depression were as likely to participate in SilverSneakers as nondepressed members (OR: 1.03; 95% CI 0.89, 1.20; p0.67). The risk of lapse in SilverSneakers attendance was 28%–55% (p0.05) higher for depressed participants during months 15–24. For nondepressed SilverSneakers participants, attendance of at least 2 visits/week during Year 1 was significantly associated with lower risk of depression in Year 2 (OR0.54; 95% CI 0.37, 0.79; p0.002); a similar but statistically nonsignificant association was observed for previously depressed participants (OR0.51; 95% CI 0.26, 1.02; p0.06).

Conclusions: While depressed older adults are as likely to enroll in a health plan–sponsored physical activity as nondepressed members, they were at higher risk of attendance lapses. Greater participation in the physical activity program was associated with lower depression risk.

Key Takeaways:

- Medicare Advantage members with depression were as likely to join SilverSneakers as members without depression
- Depression was associated with higher risk for lapses in participation, but only after 15 months
- Greater participation in SilverSneakers was associated with lower future depression risk

Depression and Use of a Health Plan–Sponsored Physical Activity Program by Older Adults

Huong Q. Nguyen, RN, PhD, Thomas Koepsell, MD, MPH, Jürgen Unützer, MD, MPH, Eric Larson, MD, MPH, James P. LoGerfo, MD, MPH

Background: The purpose of this study was to determine the associations between depression and the likelihood of enrollment in a health plan–sponsored physical activity program and pattern of program participation over 2 years; a secondary aim was to examine the association between participation dose and depression risk. There are no published studies on how depression influences participation in health plan–sponsored physical activity programs and how participation affects depression risk in older adults in nonresearch settings.

Methods: This study used administrative data from a Medicare Advantage plan. Participants (n=4766) were enrolled in the plan for at least 1 year prior to participating in the plan–sponsored health club benefit (Silver Sneakers®). Controls were age- and gender–matched to participants (n=9035). Members were identified as having depression based on ICD9-CM codes. Multivariate regression and generalized estimating equations models were used. Data were collected between 1998 and 2003 and analyzed in 2008.

Results: Members who had a history of depression were as likely to participate in Silver Sneakers as nondepressed members (OR: 1.03; 95% CI=0.89, 1.20; p=0.67). The risk of lapse in Silver Sneakers attendance was 28%–55% (p<0.05) higher for depressed participants during months 15–24. For nondepressed Silver Sneakers participants, attendance of at least 2 visits/week during Year 1 was significantly associated with lower risk of depression in Year 2 (OR=0.54; 95% CI=0.37, 0.79; p=0.002); a similar but statistically nonsignificant association was observed for previously depressed participants (OR=0.51; 95% CI=0.26, 1.02; p=0.06).

Conclusions: While depressed older adults are as likely to enroll in a health plan–sponsored physical activity as nondepressed members, they were at higher risk of attendance lapses. Greater participation in the physical activity program was associated with lower depression risk. (Am J Prev Med 2008;32(2):111–117) © 2008 American Journal of Preventive Medicine

Background Despite the many health benefits of physical activity,^{1,2} approximately 25% of U.S. adults aged 65 and older engage in less than 10 minutes of moderate- or vigorous-intensity activities a week.³ A number of studies have identified multiple barriers to physical activity adoption and maintenance including perceived poor health, lack of time, lack of social support, limited access to enjoyable physical activity programs, and negative affect or depression.^{4–6} Depression, which is the focus of this paper, affects between 5% and 10% of older adults seen in primary care and is associated with decreased adherence to self-management behaviors such as exercise, diet, and medication adherence.^{7–10} The relationship between physical activity and depression is especially complex in older adults since the influence may be in either direction. Depression can decrease motivation to engage in physical activity, but low physical activity can also lead to the development of chronic conditions that are associated with depression. Although the mechanisms and causal direction are unknown, numerous pathways have been hypothesized, such as increased biosynthesis of monoamines, catecholamines, and endorphins and improved brain blood flow and plasticity.¹¹ Psychological mechanisms include enhanced self-efficacy and self-esteem or that physical activity may serve as a buffer against stressful events, and serves to reduce social isolation.

Multiple longitudinal studies of nondepressed adult and older adult community samples that adjusted for pre-existing physical and health problems reported an inverse relationship between physical activity and depressive symptoms.^{12–20} These findings suggest that the

From Behavioral Nursing and Health Services (Nguyen), Epidemiology and Health Services Research, Prevention and Behavioral Sciences (Unützer), Center for Health Studies, Department of Medicine and Health Services Research, Center for Health and Health Services Research (Larson), and Department of Health Services (LoGerfo), University of Washington, Seattle, WA. Address correspondence and reprint requests to Huong Q. Nguyen, RN, PhD, University of Washington, Box 357280, Seattle, WA 98195. E-mail: HQNguyen@u.washington.edu.

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Effectiveness of Health and Wellness Initiatives for Seniors

Coberley, C, Rula, EY, Pope, JE
Population Health Management, 2011

Abstract

Given the increasing prevalence of obesity and lifestyle-related chronic diseases in the United States and abroad, senior wellness initiatives have emerged as a means to stem the troubling trends that threaten the wellbeing and the economy of many nations. Seniors are an important demographic for such programs because this age group is growing, both as a proportion of the overall population and as a contributor to health care cost escalation. The goal of senior wellness programs is to improve the overall health of seniors through a variety of approaches, including increased physical activity, better nutrition, smoking cessation, and support of other healthy behaviors. Outcome metrics of particular interest are the effects of participation in these programs on health care utilization and expenditures. This review describes several studies that demonstrate reduced inpatient admissions and health care costs, as well as improved health-related quality of life as a direct result of participation in large-scale senior wellness programs. Programs that effectively engage seniors in, and change behavior as a direct result of, participation provide strong evidence that health improvements and decreased health care expenditures can be achieved. However, solutions to the challenges of broader enrollment and sustained participation in these programs would increase the impact of their outcomes and health-related benefits.

Key Takeaways:

- This review of the literature evaluated the impact of various wellness programs for Medicare beneficiaries on health care costs, utilization, behavior change, health status and quality of life
- Fitness programs, including SilverSneakers, and a workplace wellness program demonstrated significant health care cost savings for participants
- Reduced hospital utilization was a common outcome across evaluated senior fitness and wellness programs
- Fitness and coaching programs had significant outcomes in other important areas including improved health-related quality of life, gait speed, self-care activities and health behaviors
- Regular and sustained engagement were key factors to program success

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Carter Coberley, PhD, Elizabeth Y. Rula, PhD, and James E. Pope, MD

Abstract

Given the increasing prevalence of obesity and lifestyle-related chronic diseases in the United States and abroad, senior wellness initiatives have emerged as a means to stem the troubling trends that threaten the wellbeing and the economy of many nations. Seniors are an important demographic for such programs because this age group is growing, both as a proportion of the overall population and as a contributor to health care cost escalation. The goal of senior wellness programs is to improve the overall health of seniors through a variety of approaches, including increased physical activity, better nutrition, smoking cessation, and support of other healthy behaviors. Outcome metrics of particular interest are the effects of participation in these programs on health care utilization and expenditures. This review describes several studies that demonstrate reduced inpatient admissions and health care costs, as well as improved health-related quality of life as a direct result of participation in large-scale senior wellness programs. Programs that effectively engage seniors in, and change behavior as a direct result of, participation provide strong evidence that health improvements and decreased health care expenditures can be achieved. However, solutions to the challenges of broader enrollment and sustained participation in these programs would increase the impact of their outcomes and health-related benefits. (*Population Health Management* 2011;14(suppl 1):S-45-S-50)

Introduction

OVER THE PAST 50 YEARS, HEALTH CARE SPENDING in the United States has increased as a percentage of gross domestic product (GDP) nearly 240%, from 5.2% in 1960 to a projected 17.5% in 2010.^{1,2} Of the estimated \$2.6 trillion that will be spent on health care goods and services in 2010,³ only an estimated 8.6% will be spent on prevention and wellness, which includes research, primary prevention, early detection, screening, and public health initiatives.⁴ Further, 20% of national health expenditures was spent by the Medicare program in 2008, a percentage that is projected to grow by at least 6.9% per year through 2019.⁵ According to the Trustees, Medicare alone could account for 11% of GDP by 2064 as a result of current and projected trends.⁶ Medicare, however, only comprises 4% of seniors' total health spending.⁷ Another 19% is paid out of pocket,⁸ so participation in effective programs yields a direct benefit to both seniors and the government.

Today, there are approximately 46 million Medicare beneficiaries; in 2030, more than 79 million people will be enrolled.⁹ Over 95% of the amounts currently spent by Medicare on the nation's senior population is consumed by beneficiaries with 1 or more chronic diseases.¹⁰ These factors, taken together and notwithstanding the reduced costs projected as a result of health care reform, have led the Medicare

Trustees to estimate that the program will be insolvent by 2029.⁵

While some of the growth in health care cost is likely the result of better treatments, the single largest contributor to escalating cost is the significant increase in the population with risk factors associated with future health compromise. Perhaps the most significant evidence of this increase can be found in Centers for Disease Control and Prevention (CDC) statistics that show an increase in the percentage of the population that is obese from 16% in 1995 to approximately 27% in 2009.¹¹ Driven in no small part by this growth in obesity, the CDC estimates that the number of new diabetes cases each year will increase from 8 per 1000 people in 2008, to 15 per 1000 in 2030, resulting in an estimated prevalence rate of 20%-33%.^{11,12}

In this article, we review the literature on health promotion and wellness programs for seniors. Our criteria for including studies in our review was that they were conducted as a randomized controlled trial or, for retrospective analyses, that there was a sample size greater than 1000 and that matching or statistical methods were utilized to control for between-group differences. Using this approach, we identified a meaningful body of evidence indicating that properly designed, implemented, and operated health, wellness, and prevention programs for Medicare populations improve

Center for Health Research, Healthways, Inc, Franklin, Tennessee.

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About Tivity Health

Tivity Health, Inc., (NASDAQ:TVTY) is a leading provider of fitness and health improvement programs, with strong capabilities in developing and managing network solutions. Through its existing three networks, SilverSneakers - the nation's leading fitness program for older adults - Prime[®] Fitness and WholeHealth Living[®], Tivity Health is focused on targeted population health for those 50 and over. With more than 13.5 million Americans eligible for SilverSneakers, over 10,000 fitness centers in the Prime Fitness Network, and more than 25 years of clinical and operational expertise in managing specialty health benefits and networks, including chiropractic services, physical therapy, occupational therapy, speech therapy, acupuncture, massage and complementary and alternative medicine (CAM) services, the company touches millions of consumers across the country and works directly with hundreds of healthcare practitioners and many of the nation's largest payers and employers.



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701 Cool Springs Blvd. Franklin, TN 37067