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RESEARCH ARTICLE

Comparative Effectiveness of Wellness Programs: Impact of Incentives on Healthcare Costs for Obese Enrollees

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Introduction: Employee wellness programs show mixed effectiveness results. This study examined the impact of an insurer's lifestyle modification program on healthcare costs of obese individuals.

Methods: This nonrandomized comparative effectiveness study evaluated changes in healthcare costs for participants in two incentivized programs, an Internet-mediated pedometer-based walking program (WalkingSpree, n=7,594) and an in-person weight-loss program (Weight Watchers, n=5,764). The primary outcome was the change in total healthcare costs from the baseline year to the year after program participation. Data were collected from 2009 to 2011 and the analysis was done in 2014–2015.

Results: After 1 year, unadjusted mean costs decreased in both programs, with larger decreases for Weight Watchers participants than WalkingSpree participants (–$1,055.39 vs –$577.10, p=0.019). This difference was driven by higher rates of women in Weight Watchers, higher baseline total costs among women, and a greater decrease in costs for women in Weight Watchers (–$1,037.60 vs –$388.50, p=0.014). After adjustment for baseline costs, there were no differences by program or gender.

Conclusions: Comparable cost reductions in both programs suggest that employers may want to offer more than one choice of incentivized wellness program with monitoring to meet the diverse needs of employees.

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INTRODUCTION

Payers are increasingly experimenting with financial incentives and online wellness programs to encourage insured individuals to adopt healthy behaviors, despite limited evidence supporting health benefits or effects on medical costs.[1–5] Such programs have been stimulated by provisions in the Affordable Care Act that support wellness programs, such that the majority of employers, and nearly all large employers, now provide some form of wellness program.[1,2] Some workplace wellness programs have demonstrated cost

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reductions,[3,4] and productivity benefits,[5] but a comprehensive RAND study failed to find significant decreases in cost or use of hospital care and emergency department care associated with workplace wellness programs.[1]

Possible reasons for these conflicting findings include differences in study populations, program content, financial incentives for participation (e.g., cash, copayment reductions); whether the wellness program is associated with any health benefits (that might impact healthcare costs); and the degree to which programs include all employees/enrollees or target high-risk individuals.[6] Voluntary programs that are offered to all employees/enrollees without financial incentives may have low participation rates and fail to attract those at greatest risk of negative health outcomes and high healthcare costs.[7] However, mandatory or compulsory programs that specifically target high-risk individuals may be discriminatory and can be ineffective in reducing costs through behavior change.[8] The optimal content and incentives for wellness programs remain unknown, as are the incentives for optimal weight loss more generally.[9]

In light of the mixed evidence regarding the effectiveness of wellness programs to improve health and reduce costs, this study examined the impact of a large-scale, targeted lifestyle modification program on healthcare costs. Beginning in October 2010, Blue Care Network (BCN) of Michigan, an HMO, began offering wellness programs for obese enrollees through the Healthy Blue Living (HBL) initiative. Participants could enroll in either an Internet-mediated pedometer-based walking program called WalkingSpree (WS) or the Weight Watchers (WW) weight-loss program. To encourage participation in WS or WW, enrollees who participated in either of these lifestyle modification interventions qualified for lower copays and deductibles. This prior research indicated high levels of program acceptance and participation.[10]

This study explored differences in healthcare costs between participants who chose the physical activity–focused WS program relative to the more diet-focused WW program. These results will be of interest to payers considering adoption of wellness programs by identifying the impact of different programs on healthcare costs, because a recent Patient-Centered Outcomes Research Institute report notes that payers and employers are in tremendous need of comparative effectiveness research on benefit design.[11]

METHODS

The researchers assessed total healthcare costs between enrollees in WW and WS, comparing baseline costs with costs 1 year after participation (2009–2011); the analysis was completed in 2014–2015. These analyses were done separately for male and female participants because there was significant gender imbalance by program, and expenditures of obese patients exceed those of normal-weight patients at an earlier age for women than men.[12]

Study Population

During the study period, BCN of Michigan allowed employers to sponsor HBL for obese BCN enrollees (defined as a BMI of ≥ 30) to receive reduced deductibles and copayments if they enrolled in a wellness program (either WS or WW) and participated over the plan year. This financial incentive amounted to an estimated 20% in savings (up to $2,000 for some families) in out-of-pocket medical expenses. Although the specific details of the enhanced benefits differed by employer and HBL plan options, the incentives were the same for participation in both programs. BMI was obtained using clinical weights, as participants were required to visit a primary care provider for a health screening.

The multi-component automated web-based lifestyle change intervention, WS, includes the use of a pedometer, which was provided to each WS enrollee to allow them to upload step counts and monitor progress toward a step count goal. To remain eligible for reduced cost sharing, individuals who chose WS had to average at least 5,000 steps per day over each 3-month period. Those who chose WW were required to attend at least 11 of 13 weekly in-person WW meetings per session. Additional details on the HBL program and its requirements are available elsewhere.[10]

Statistical Analysis

The study population was characterized by means (SDs) for continuous measures and counts (percentages) for categorical measures. Bivariate comparisons between groups were made using chi-square and independent sample *t*-tests where appropriate. Costs at baseline and 1 year within the same group were compared using paired *t*-tests.

The primary outcome was the change in total healthcare costs from the baseline year to the year after program participation, which accounts for time-invariant unobserved confounding at the patient level. A linear regression of the mean change in cost revealed skewness in residuals due to the presence of outliers, so median regression was estimated as a linear regression through the median of the conditional distribution of the outcome given the covariates.[13] An advantage of this method is that the statistical inference does not rely on any distributional assumption and is thereby robust. The primary independent variable was an indicator of program participation (i.e., WS or WW), with adjustment for the participant's age, baseline BMI, baseline Charlson Comorbidity Index (CCI),[14] and total healthcare costs in the baseline year before program participation. CCI was determined using ICD-9 codes from baseline year claims data, and participants' CCI scores were categorized as having 0, 1, or ≥ 2. Men were more likely to choose WS and less likely to choose WW than women and there was a significant program by gender interaction on costs, so all analyses were estimated separately by gender. All analyses were conducted using Stata, version 13.1. A statistical significance level of $p < 0.05$ was used for all analyses. This study was classified as exempt by the University of Michigan IRB (HUM00075013) because it was not identifiable data.