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Linking Health, Secondary Conditions and Employment Outcomes

Catherine Ipsen
University of Montana - Research and Training Center on Disability in Rural Communities

University of Montana Rural Institute
scholarworks-reports@mso.umt.edu

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Research Report

Linking Health, Secondary Conditions and Employment Outcomes

Health is important to securing and maintaining employment, but for many low-income or unemployed people access to health promotion programs is limited.

This is a problem for many people with disabilities who do not work and who rely on Medicare or Medicaid to cover their healthcare costs. Without access to programs that promote health and reduce secondary conditions, people with disabilities may find it difficult to get a job or stay employed. This may be a factor in this group's persistently high unemployment rates.

Participation in worksite health promotion programs has been shown to (1) increase employee productivity through reduced absenteeism rates, and (2) reduce health-related insurance claims (Aldana, 2001; Pelletier, 2001). Evidence further suggests that worksite health promotion is most beneficial for individuals with multiple health risk factors (Aldana, 2001) that parallel many of the most prevalent secondary conditions experienced by people with disabilities. Some of these risk factors include weight problems, sedentary lifestyle, high blood pressure, and elevated cholesterol.

Secondary conditions occur as a result of, or in conjunction with, a primary disabling condition; and most secondary conditions are amenable to health promotion activities (Ravesloot, et al., 2003). Past research conducted by RTC: Rural has shown that participation in the Living Well with a Disability health promotion program reduced the prevalence of secondary conditions by an average of 25%; significantly increased healthy behaviors such as exercise and proper nutrition; and reduced acute health care expenditures (Ravesloot, et al., 2003). This research, however, did not address the relationship between health promotion and employment. This brief report provides a preliminary look at the relationship among health behaviors, secondary conditions, and employment outcomes for people with disabilities.

The University of Montana Rural Institute
RTC RURAL
Research and Training Center on Disability in Rural Communities

RTC:Rural
52 Corbin Hall
The University of Montana
Missoula, MT 59812
Toll Free: 888.268.2743
Fax: 406.243.2349
TTY: 406.243.4200
rtcrural@ruralinstitute.umt.edu
rtc.ruralinstitute.umt.edu
Alternative formats available

Research Methods

The data analyzed for this report came from the 2002 Behavioral Risk Factor Surveillance System (BRFSS), a national data collection effort supported by the Centers for Disease Control. The study sample included 3,094 working age (18-65) people with disabilities, who reported being either "employed" (employed for wages or self-employed) or "not employed" (out-of-work or unable to work).

Data were analyzed using logistic regression. Regression, in the broadest sense, uses independent variables (such as age, education, and gender) to help explain the variation in a dependent variable (i.e. income level). One advantage of regression analysis is that the influence of multiple independent variables on the dependent variable can be evaluated simultaneously. Logistic regression is a type of regression analysis where the dependent variable can take only one of two values (in this case, "employed" vs "not employed").

This logistic regression model used independent variables measuring age, education, gender, marital status, children, severity of disability, secondary conditions, and health behaviors to predict the probability that an individual will be "employed" versus "not employed."

Results

From the estimated model, each person is assigned a probability based on individual characteristics. Any person with an estimated probability of employment less than .5 is classified as "not employed" and any person with an estimated probability of .5 or greater is classified as "employed." Overall, the logistic regression model correctly classified 78% of the sample as "employed" versus "not employed." Statistically, this represents good model fit with the data.

The probability of being employed was higher for younger, more-educated, and married respondents. Conversely, people who experienced more significant disabilities had a lower probability of employment. These findings were expected and support past research. Of more interest is that after accounting (or controlling) for the influence of age, education, and severity of disability, both health behaviors and secondary conditions further explained the probability of employment. Holding all else constant, respondents who exercised in the previous month had an 8.4 percentage point higher probability of employment compared to respondents who did not exercise, and a one day decrease in average reported days of limitation per month from secondary conditions (ranging from 0 to 30 days per month), increased the probability of employment by 1.3 percentage points. These findings have important implications for the role of health promotion activities in facilitating employment for people with disabilities.

Study Implications

To clarify the implications of these results, consider three individuals who hypothetically enter a health promotion program. Table 1 describes these participants at baseline and post-intervention. The baseline descriptions are based on three individuals from the BRFFS study sample. The associated probabilities for employment are the logistic regression probability estimates for these individuals.

Post-intervention probabilities were adjusted to incorporate probable changes in health status after participation in a health promotion program such as Living Well with a Disability. For purposes of illustration, it is assumed that individuals will experience a 25% decline in limitation due to secondary conditions and will begin an exercise program if they did not exercise at baseline. Although some participants may not realize a change in work status, it is expected that most program participants would increase their overall probability for employment.

The results described in Table 1 are especially relevant for participants who have a probability near .5 at baseline. At this .5 probability, the expectation of being employed is about 50/50, similar to flipping a coin and predicting heads or tails. If participation in health promotion

programming can influence these odds in favor of employment, this will be realized in higher employment rates for individuals with disability.

Results of this study support the hypothesis that participation in health promotion programs (such as Living Well with a Disability) has a positive effect on employment outcomes. Unfortunately, access to health promotion can be significantly limited for people with disabilities who do not work or can't afford to pay the out-of-pocket costs of health promotion interventions.

One way to overcome this access issue is to incorporate health promotion into the service systems that help people (1) find and maintain work (i.e. Vocational Rehabilitation), and (2) address their ongoing health needs (i.e. Medicaid/Medicare).

Table 1. Participation in a Health Promotion Program: Potential Impacts on Employment

Before Participation in a Health Promotion Program			After Participation in a Health Pormotion Program		
Participant Description	Baseline Probability for Employment	Employed at Baseline	Health and Lifestyle Changes	Post intervention Probability for Employment	Employed
Case 1: A 39 year old female with a high school education who experiences moderate disability reports an average of 14 days of limitation due to secondary conditions (out of 30). She currently does not exercise.	.476	No	Participant reduces days of limitation by 3.5 days and begins an exercise program. This reflects a 4.5 percentage point increase in probability for employment from reduced limitation due to secondary conditions and an 8.4 percentage point increase for starting a regular exercise program.	Converting 4.5 and 8.4 percentage points back to probabilities, the post-intervention probability is .476 + .045 +.084 = .605	Yes

Before Participation in a Health Promotion Program			After Participation in a Health Pormotion Program		
Participant Description	Baseline Probability for Employment	Employed at Baseline	Health and Lifestyle Changes	Post intervention Probability for Employment	Employed
Case 2: A 49 year old male with a college education who experiences significant disability reports an average of 22 days of limitation due to secondary conditions (out of 30). He currently does not exercise.	.165	No	Participant reduces limitation by 5.5 days and begins an exercise program. The reflects a 7.2 percentage point increase in probability for employment from reduced limitations due to secondary conditions and an 8.4 percentage point increase for participating in a regular exercise program.	Converting 7.2 and 8.4 percentage points back to probabilities the post-intervention probability is .165 + .072 + .084 = .321	No
Case 3: A 41 year old male with a high school education who experiences moderate disabilities reports an average of 6 days of limitation due to secondary conditions (out of 30). He currently exercises.	.682	Yes	Participant reduces limitation by 1.5 days. This reflects a 2.0 percentage point increase in probability for employment from reduced limitation due to secondary conditions.	Converting 2.0 percentage points back to probabilities the post-intervention probability is .682 + .02 = .684	Yes

Recommendations

VR offers an array of services including vocational evaluation, counseling and guidance, medical and psychological services, training, and job placement to help people with disabilities find and maintain employment. However, medical services focus on acute care and are constrained to the “diagnosis and treatment of physical or mental impairments.” The Rehabilitation Act language should be modified to specifically reference health promotion programs as a legitimate VR medical expense.

Similarly, while Medicare and Medicaid programs cover some preventive screening, medicine, and immunization services, most health education and wellness programs that focus on behavior change are not reimbursable (Gordon & Lapin, 2001). If Medicare and Medicaid

programs cover health promotion interventions, it is likely that people with disabilities will increase their utilization of these types of programs and subsequently realize the associated health benefits. Another probable benefit is that acute medical claims will be reduced.

Next Steps

This study examined the relationship among secondary conditions, health behaviors and employment using cross-sectional BRFSS data. Longitudinal studies that examine employment outcomes as a result of participation in health promotion programs will provide a more complete picture of these interactions. If outcomes from longitudinal studies are confirming, health promotion should be incorporated into the agencies and programs that support the health, well-being and employment of people with disabilities .

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Prepared by
Catherine Ipsen, Ph.D.

For additional information please contact
Research and Training Center on Disability in Rural Communities; The University of Montana Rural Institute;
52 Corbin Hall, Missoula, MT 59812-7056; 888-268-2743 or 406-5467;
406-243-4200 (TTY); 406-243-2349 (Fax);
rural@ruralinstitute.umt.edu
http://rtc.ruralinstitute.umt.edu

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