

INVEST EAP – RESEARCH SUMMARY

Outcomes of Behavioral Health Screening and Specialized EAP Counseling: A Longitudinal Study of Employees in Vermont

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Introduction

There is considerable evidence that brief counseling provided by employee assistance programs (EAPs) reduces stress and behavioral health problems associated with common life struggles, emotional health issues and work problems. There is also good evidence that Behavioral Screening and Intervention (BSI) programs that screen and treat individuals for depression, substance use, and smoking, can improve health outcomes and reduce associated future healthcare expenditures. This study tested a unique applied intervention program with these two kinds of interventions being delivered together onsite by specially trained counselors. We hypothesized that an expanded Behavioral Screening and Intervention (BSI) model that screened for both traditional BSI measures and common issues presented to EAP with intervention and referrals provided by a highly trained EAP counselor would improve both health and work outcomes.

Methods

Context. Invest EAP is a public, not-for-profit, organization that operates within the State of Vermont's Division of Vocational Rehabilitation. Invest EAP provides services to a broad cross section of the public and private

sectors in Vermont; approximately 20% of the State's entire population is covered. Two research grants were obtained for this project.

Sample Sources. After qualifying from the screening process, patients seeking care at a community health center (N = 120) and employees participating in a workplace wellness program (N = 30) were provided personal coaching. However, the sample used in this report included only the 98 cases who were working and excluded the 52 unemployed cases.

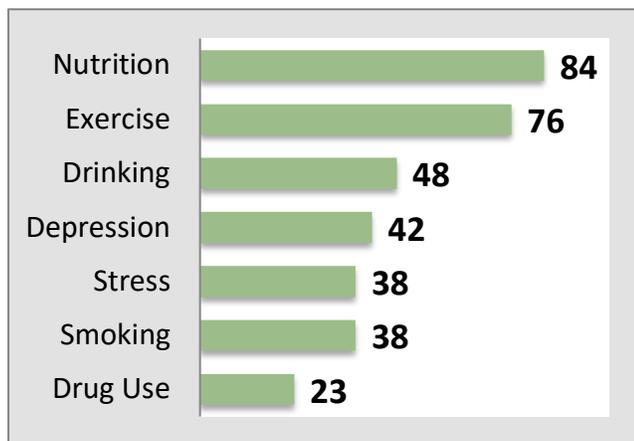
Sample Demographics. The background characteristics of 98 cases in the sample included an average age of 44 years, 62% were married, half had children living at home, 95% were of white race, and 74% women and 26% men. The household income average was \$40,204.

Screening. The 2-page screening instrument contained 14 items (involving 22 distinct responses). The items identified risks in the areas of diet/nutrition, physical exercise, depression, smoking, alcohol, drugs, personal life concerns, work absence, work presenteeism, work productivity, and nuisance health problems. It was given to people at the health clinic who were there for routine and emergent medical services and was given to employees at the worksite who voluntarily chose to participate in a company-wide wellness initiative. The

screening responses were scored immediately by staff at the clinic or at the workplace and if the person scored above the cutoff level for one or more risks, then he or she was invited to participate in further counseling.

Behavioral Health Risks. Results from the screening revealed employees in the sample had the following risk profile: Nutritious Diet (86% at-risk); Physical Exercise (78%); Depression (43%); Stress and Anxiety (39%); Binge Drinking (49%); Smoking (39%); and Drug Use (23%). The average person had 3.6 risks of the 7 possible and 92% of cases had two or more risks.

Figure 1. Number of Cases At-Risk at Baseline for Each Behavioral Health Factor Out of Sample of 98



Counseling Treatment. The clinical services were provided to study participants in face-to-face sessions by two Master’s level licensed counselors from Invest EAP – one female and one male counselor. These were licensed mental health professionals with comprehensive training in Motivational Interviewing.

Longitudinal Study Design. The research design was a non-experimental, prospective, longitudinal design involving a single-group for the intervention and a 1 x 2 x 4 design, with one group that received the intervention (EAP counseling/BSI intervention) but no control group that did not receive counseling, with participants coming from two project sites in the

same state, and repeated measurement over four points in time. The following points were enacted for data collection: Start of Case (T1); End of Case (T2); Follow-up at 3-months after end of case (T3); and Follow-up at 6-months (T4). The intended timing intervals between the four points of data collection was largely achieved: For the typical case, the course of participation in the study took about 10 months (treatment phase of 3 months + first follow-up of 4 months + second follow-up of 3 months).

Measures. The measures of health and work outcomes were based mostly from existing published research instruments. These included Global Health assessment component of the Patient-Reported Outcomes Measurement Information System (PROMIS) questionnaires. Depression was assessed with the Patient Health Questionnaire 9-item scale (PHQ-9). Stress and other personal life concerns were adapted from past research in EAP. Three common kinds of substance use problems were measured, including risky (binge) drinking of alcohol - the Alcohol Use Disorders Identification Test (AUDIT) as well as single items on smoking and drug use. Hours of work absence were measured by the single-item absenteeism question from the Workplace Outcome Suite (WOS). A single-item was adapted for this study from the job performance item from the Health and Productivity Questionnaire (HPQ).

Results

The counseling interventions resulted in significant improvements for all the seven health risks (see Figure 2). These improvements were largely sustained over time at 3-month and 6-month follow-up periods (see averages in Figure 3). Thus, the immediate improvements achieved from the counseling were maintained over time well after the counseling ended.

Figure 2. *Decrease in Risk Factors from Start to End of Treatment Among Cases Initially At-Risk*

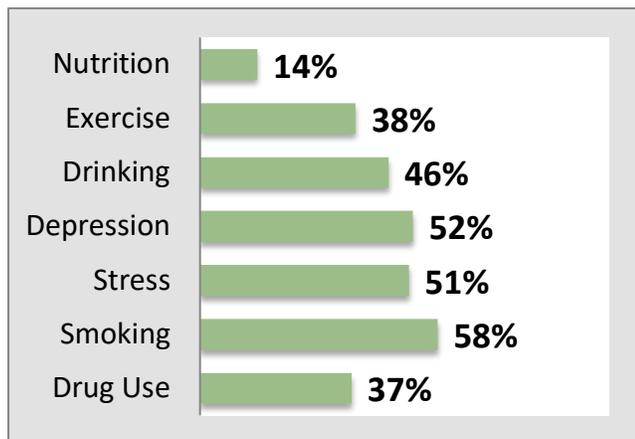
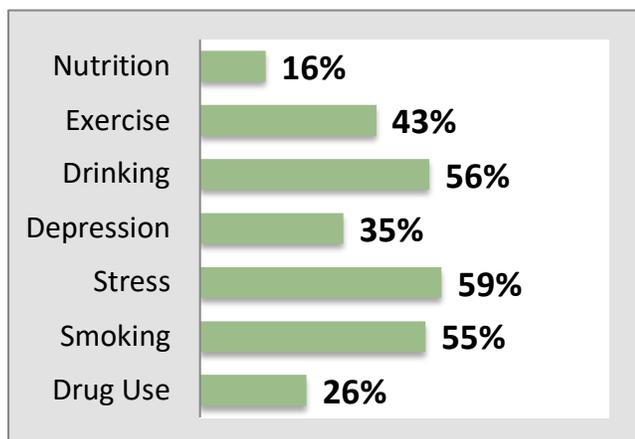


Figure 3. *Continued Decrease in Risk Factors from Start of Treatment to Follow-ups (Average of 3- and 6-month After End of Treatment) Among Cases Initially At-Risk*



Additional Health Care Costs for Each Risk Factor. Typical differences in health care costs between those at-risk and those not at-risk were obtained from multiple other research studies. These are represented as a percentage increase above the average annual health care costs. We derived a basis cost for the average adult that was adjusted for gender and the northeast region of the country to match the study sample. Using data from 2015, the figure was \$5,756. Our estimated additional cost for each risk was as follows: Nutritious Diet (+10% = \$574);

Physical Exercise (+11% = \$625); Depression (+41% = \$2,329); Stress (+16% = \$889); Binge Drinking (+66% = \$3,822); Smoking (+15% = \$832); and Drug Use (+54% = \$3,080).

Gross Savings in Additional Health Care Costs for Risks. We used the percentage of decreases in the risk factors to estimate the potential cost savings in the next year. First, we used the percentage of clinical improvement to determine how much of cost savings there was for 3-months (corresponding to the EAP treatment period – Figure 2). Second, we used the percentage of clinical improvement at the two follow-ups (averaged together) to determine how much of cost savings there was for remaining 9-months (corresponding to full follow-up period – Figure 3). These percentages of improvement were applied to the estimated annual additional costs for each risk factor (25% of annual additional costs for the treatment period and 75% of the additional annual costs for the remaining 9 months of the year). This was done separately for each risk factor. Our estimated cost savings for each risk was as follows for those who were initially at-risk: Nutritious Diet (\$89); Physical Exercise (\$262); Depression (\$1,312); Stress and Anxiety (\$338); Binge Drinking (\$2,196); Smoking (\$448); and Drug Use (\$871).

Net Savings in Health Care Costs for Risks. Our estimated gross cost savings for each risk factor were reduced in two ways. First, we calculated the average cost savings for all cases in the study (i.e., the savings for only those at-risk were averaged across all 98 employees). Secondly, were reduced the extra costs that would be expected to occur in the future for the few cases who became at-risk later on in the study but who were not initially at-risk at the start. The NET savings in annual health care claims costs for each risk factor for the average case in the study were as follows:

- Binge Drinking = \$1,076
- Depression = \$485
- Drug Use = \$205
- Smoking = \$174
- Physical Exercise = \$130
- Stress and Anxiety = \$72
- Nutritious Diet = \$18
- TOTAL = \$2,159 PEPY

Workplace Lost Productive Time. At each assessment, we determined how many hours of productive time were lost to a worker's health (LPT). This metric starts with considering all of the hours someone is scheduled to work in a month. We assume a 160-hour standard full-time schedule. From the scheduled total, we first deduct the hours lost to absence from work. From a 160-hour schedule, we deduct the hours of absence at baseline (assume this is 10 hours), which leaves 150 hours actually worked. Next, we use the work productivity 0-10 rating results to determine how much of the remaining time at work was unproductive time. The 0-10 rating reflects the full range of low to high work productivity and when multiplied by 10, it becomes a metric of 0% to 100% of work time. Assume that at baseline there was a 60% level of work productivity. The amount of unproductivity is the difference between this level and the maximum of 100%. In this example, 40% of the time worked was unproductive. To get the number of hours of unproductive time, we multiply the actual hours worked of 150 by the 40% level of unproductivity. This amount of unproductive time (60 hours) is then combined with the number of hours of absence from work (10) to yield the total Lost Productive Time (LPT) result (60 + 10 = 70 hours).

Using this approach, the amount of unproductive work time at baseline was 71 hours (8 for absence and 63 for presenteeism while at work). After treatment, the hours of lost productive time were reduced by 40% to an average of 42 hours (4 for absence and 38 for presenteeism). At the

follow-ups, the hours of lost productive time continued to be less than at baseline - by 28% to an average of 51 hours (5 for absence and 46 for presenteeism). When extended to a full 12-month period, this is a restoration of 264 hours of productive work time that would have been lost. Note that most of this outcome is from avoided work presenteeism compared to absence from work (77% vs. 23%, respectively).

Case data on household income was used to calculate wages. Vermont average for benefits load (40%) was added to estimate the level of hourly compensation of \$22.17 for wages and benefits combined. This figure was further increased by a productivity multiplier ratio of 1.25 (based on past economic research) to yield a \$22.18 rate for the business value of productive work to the employer. The total savings per employee per year is then estimated at \$5,857. These results suggest a workplace outcome for the average case in the study:

- 33 lost work days avoided per year
- \$5,857 value to employer PEPY

Conclusion

We hypothesized that an expanded Behavioral Screening and Intervention (BSI) model that screened for both traditional BSI measures and common issues presented to EAP with intervention and referrals provided by a highly trained EAP counselor would improve both health and work outcomes. We had positive results for multiple outcomes and yielded cost savings estimates that support offering preventive services to adults. Health care cost savings per case per year were estimated at \$2,159. Savings from reduced lost productive days at work per employee per year were \$5,857. These cost savings more than cover the cost of conducting the screening and providing the on-site counseling and health coaching. This was a successful proof of concept for a combined onsite screening and EAP intervention strategy for common behavioral risk factors.