

## More Vulnerable, More to Gain? A Pilot Study of Leader's Perceptions of Mental Health Programs and Costs in Small Workplaces

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### Introduction

Small businesses have the most to gain from, yet are least likely to offer, health promotion programs, including those focusing on employee mental health.<sup>1,2</sup> Collecting information on leaders' perceptions of mental health burden and related programs can help identify factors that can promote increased awareness of mental health needs in small businesses.<sup>3-5</sup>

Gathering input across networks is critical to building capacity for evidence-based mental health promotion (MHP), including in small businesses. Models including the Strategic Prevention Framework,<sup>6</sup> the Community Health and Economic Prosperity initiative,<sup>7</sup> and Research-to-Practice Methods<sup>8</sup> emphasize the importance of conducting needs assessments, providing feedback to the workforce community, and ensuring relevance of content to stakeholders, including the provision of information about program return on investment.

The current study is part of a multi-agency project of community stakeholders who, working at the interface of economic development, public health, and MHP, seek to increase utilization of evidence-based MHP. Collaborators adapted a MHP called Team Awareness<sup>9,10</sup> to help build stakeholder interest in MHP and forecast positive economic impact on the local workforce. Part of the project included providing actionable feedback to stakeholders to address previously identified concerns including how to estimate return on investment of programs.

We conducted a survey of community stakeholders and business leaders to gather information on how to collect financial data to estimate economic impact of MHP.<sup>11</sup> The survey was designed to address:

- (1) To what extent do workplace leaders feel that exposures (eg, burn-out, mental health, poor health, fatigue) cause productivity problems in their workforce?
- (2) What are the estimated financial costs associated with mental health related (MHR) exposures?
- (3) What types of MHR programs are in place to help mitigate these losses?
- (4) To what degree can MHR programs reduce these costs?

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We were particularly interested in exploring MH vulnerability and the degree to which respondents report productivity loss as a function of the number or magnitude of MH exposures. While we hypothesized that greater exposure to MH risk would lead to greater loss or cost, some respondents may report loss even with one exposure while others may have many exposures and lower costs.

We conducted the study focusing on organizations in Central New York. Workplaces in remote rural settings, such as Central New York are rarely included in survey assessments. Further, a recent report on occupational disease points to the need for MH programs in New York state.<sup>12</sup>

## Methods

Collaborators recruited stakeholders and employers to participate in initial interviews and focus groups designed to engage stakeholders, assess MHR concerns, and identify potential solutions. The interviews and focused groups informed the development of a survey designed for workplace leaders including the following item sets: demographics, ratings on MHR concerns, estimated productivity impact, current MHR programs, and financial data.

### Collaborator Recruitment Efforts

Collaborators contacted participants for this project, including Southern Tier 8—the local development district of the federal Appalachian Regional Commission and the Economic Development Administration (Binghamton); agencies associated with the Collaborative Recovery Empowerment of the Southern Tier (CREST); The National Council on Alcoholism and Drug Dependence — Rochester Area; and Leatherstocking Education on Alcoholism/Addictions Foundation (Oneonta).

### Initial Capacity Building

From July through December 2021, we conducted 18 in-depth 90-minute stakeholder interviews with leaders in diverse communities (including directors of chambers of commerce, executives from for-profit businesses, public health, and county government, and directors of workforce development). We also conducted 90-minute focus groups in 6 organizations whose employees work directly with at-risk populations (staff in workforce development, mental health in higher education, YMCA, community mental health, a youth center, and non-profit social charity).

### Focus Group Input on Survey Design

A draft survey was sent to thirteen workplace leaders who were recruited to participate from CREST leadership. Eight participants attended a 90-minute focus group to provide detailed feedback on survey design and wording. Participants held various leadership positions (eg, CEO, President, Senior Directors) and represented diverse industries (eg, Healthcare, Manufacturing, Restaurants, Information Technology, Security).

### Survey Design and Implementation

Following input from the interviews and focus groups, we developed a 25-item, anonymous survey to capture organizational stakeholder

perceptions of mental health-related productivity loss and perceptions of programs that could help mitigate those impacts. Sampling was based on convenience and snowball methods. Collaborators sent notifications to colleagues and member lists through email and social media. A total of 238 respondents began the survey and roughly 140 completed most sections for results reported here. Sample sizes vary by analysis due to missing data.

### Survey Sample

Organizational respondents included nonprofit (61%), for-profit (24%), and government organizations (14%). Industries most represented were health care and social services (35%), public administration (18%), and educational services (16%). Manufacturing, construction, and arts/entertainment each added between 4% and 6%. Other industries provided less than 2% (eg, food services, finance, information, mining, retail). Most prevalent job positions included C-suite (23%), Director/Vice-President (21%), Manager/Supervisor (20%), Senior Manager (11%), and Health and Wellness Professional (6%). Respondents represented an estimated 52,000 workers from twenty-two counties in Central New York. Business sizes are described in Figure 1.

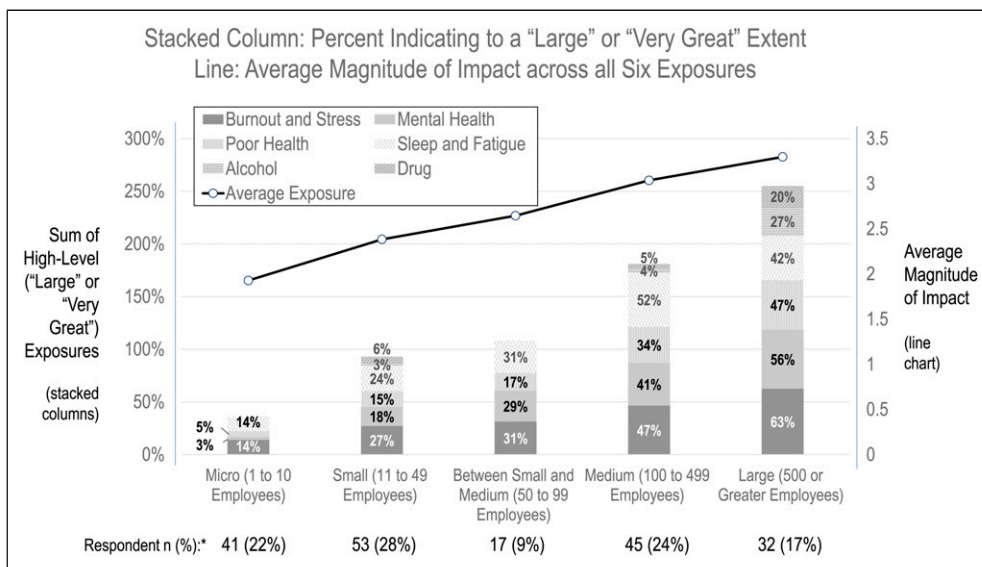
### Measures

Eight variables assessed the influence of mental health-related (MHR) programs on administrative and labor costs. These were perceived *impact of exposures* to MHR issues in their workforce, the *percentage of personal lost administrative productivity* dealing with these issues, the *percentage of employee lost productivity* due to these issues, and the number of employee MHR programs in the organization. In addition, respondents reported their personal salary, and estimated total employee labor cost. For all variables, mean imputation based on organization size was used to supplement missing data.

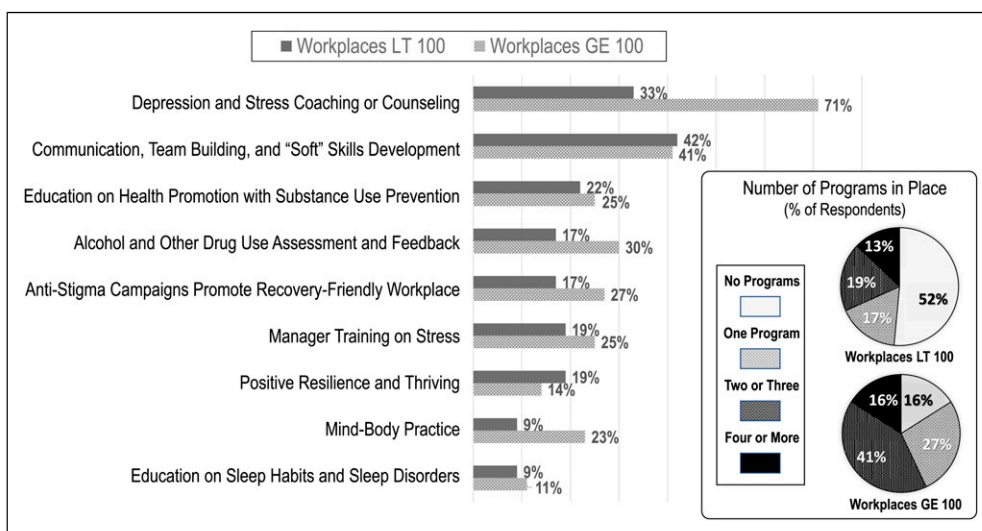
**Average Impact of MHR Exposures.** Respondents reported “the extent to which financial health and productivity problems in your organization has been caused by each of the following: stress and burn-out; employee mental health concerns; lack of sleep and fatigue; lack of general health; employee alcohol use; and other drug use.” Responses options were 1-Not at all, 2-To a small extent, 3-To a moderate extent, 4-To a large extent, 5-To a very great extent, and Don’t Know. After removing don’t know responses, the average of the 6 items was calculated to assess magnitude of impact across all 6 exposures (Mean = 2.61; Median = 2.5; SD = 1.00, n = 172).

**Lost administrative productivity.** To assess productivity lost due to these 6 exposures, we asked: “What percentage of your own time at work (in a typical month) have you spent dealing with the above work issues? This includes taking time to put out fires or deal with crises; do extra work you would otherwise not have to do; take extra problem-solving time; talk to employees; coach, counsel, or discipline; conduct performance reviews; meet with human resources; or work with consultants or vendors.” Respondents provide a number from ‘0%’ to ‘90+%’.

**Lost employee productivity.** One survey item asked: “For the typical employee, what percentage of an employee’s workweek is unproductive



**Figure 1.** Mental Health-Related Exposures by Workplace Size. Note. Ns Vary Due to Missing Cases. Response Options for Each of 6 Items Were 1-Not at All, 2-To a Small Extent, 3-To a Moderate Extent, 4-To a Large Extent, 5-To a Very Great Extent, and Don't Know.



**Figure 2.** Current Mental Health-Related Programs: Compared by Business Size with Less Than 100 Employees.

because of their stress, burn-out, mental health, alcohol, or drug misuse issues?" Respondents provide a number from '0%' to '50+%'.

**Number of mental health-related programs (MHP).** Respondents were provided a list of 9 programs and indicated "whether you know that your organization provides the service or program." See Figure 2 for list of programs. A sum was calculated for all 9 programs with a total score ranging from '0' to '9' (Mean = 1.55; Median = 1.00; SD = 1.77).

**Costs associated with lost productivity.** Respondents provided typical hours worked per week for themselves and for both full- and part-time employees, the number of these employees, and hourly wages. These variables were used to calculate total annual salaries for each respondent and for employees within their organizations as well as to estimate both the total annual cost of lost administrative time and cost of lost employee productivity.

### Analytic Approach

We compared results for workplace sizes of less than 100 to sizes greater than 100. In addition to calculating the distribution of all responses, we used correlational analyses to assess the relationship between self-reported *Average MHR exposures* and cost variables. We reviewed scatterplots to identify and remove outliers. Model fit improved after outlier removal. We estimated generalized linear models (GLM) with quasi-Gamma distribution and log link function to assess the relationships between the 2 lost administrative productivity and lost employee productivity and 3 predictors: *exposures*, *MHP*, and the interaction of *exposure x MHP*. This interaction terms tests whether the presence of programs moderate exposures. Gamma distribution was used to accommodate cost outcomes. Gamma distribution was used for outcomes

**Table 1.** Estimates of Lost Time and Productivity Costs Associated with Mental Health-related Exposures: Workplaces with Less than 100 or 100 or More Employees.

	Average Cost (SD)	Total cost	Correlation (R <sup>2</sup> with average Exposures)	Average cost (SD)	Total cost	Correlation (R <sup>2</sup> with average Exposures)
	Workplace Size Less than 100			Workplace size 100 or more		
	Estimated Average Annual Costs Due to Lost Administrative Time (Per Workplace)					
Estimates	\$25,134 (\$22,014)	\$2.2 mill	r = .41* R <sup>2</sup> = .17	\$41,996 (\$29,762)	\$2.1 mill	r = .02 R <sup>2</sup> = .00
	Estimated Average Annual Costs Due to Lost Labor Productivity (Per Workplace)					
Estimates	\$108,313 (\$113,758)	\$9.6 mill	r = .55* R <sup>2</sup> = .30	\$3.4 mill (\$7.5 mill)	\$171.2 mill	r = .17 R <sup>2</sup> = .03

\* $P < .001$ . Ns vary due to missing cases. For workplaces of LT 100: Lost administrative time (Mean Workplace Size = 21; n = 82; 7 outliers removed); Lost labor productivity (Size = 20; n = 85; 4 outliers). For workplaces of GE 100: Lost administrative time (Size = 548; n = 50; no outliers); Lost labor productivity (Size = 477; n = 47; 3 outliers).

with a high number of zeros. For purposes of the current pilot study and using estimates, we modeled a solution that compared having a comprehensive set of (all 9) programs vs having none.

## Results

### Mental Health-related Exposures

Respondents identified burn-out and stress (35% reporting high or “large” or “very great” levels); sleep and fatigue (31% reporting high-levels); and mental health (27% reporting high levels) as conditions with the greatest impact on productivity and financial loss. The percent of respondents indicating MHR exposures varied by business size. Figure 1 shows these differences for the average magnitude of impact across all 6 exposures (line chart), and the percent of respondents reporting “large” or “very great” (ie, high-level) responses for all 6 exposures (stacked columns). There was a positive relationship between workplace size and each exposure, the accumulation of high-level exposures, and the average MHR related exposures.

### Lost Productivity

Respondents reported 39% (M = 39.1; SD = 26.8) of their own lost productivity was due to MHR exposures each month, and 16% (M = 15.5; SD = 11.5) of lost employee productivity each week. Comparing by business size, lost admin time was lower for smaller/LT 100 (M = 34.3; SD = 24.8; n = 93) than larger/GE 100 (M = 47.7; SD = 28.6; n = 53);  $t(144) = 2.96, P = .004$ . A similar pattern was found for lost employee productivity: smaller (M = 14.1; SD = 11.6; n = 93) and larger (M = 17.9; SD = 11.06; n = 53);  $t(180) = 1.97, P = .05$ .

### Costs Associated with Lost Productivity

Table 1 provides respondents assessment of the average cost per workplace for both lost administrative time and lost worker productivity, and the total accumulated costs. The average cost of lost productivity was significantly lower for smaller organizations. Summing all respondents cost data, total annual costs due to lost labor productivity was \$9.6 M for smaller and \$171M for larger workplaces. Table 1 provides the correlation and r-squared between average MHR exposure and these cost estimates. Correlations between exposures and costs were significant at the  $P < .05$  level only for smaller workplaces.

The latter suggests that the more MHR exposures experienced by respondents the more likely this has an effect on both their own and their employee’s productivity costs. To illustrate, Figure 3 provides the scatterplots for each of the correlational analyses as reported in Table 1. Smaller businesses appeared more vulnerable as they reported more cases with low exposure and higher costs.

### Presence of Program

Figure 2 shows MHP in place. There were more programs in larger workplaces (M = 1.98; SD = 1.59) than smaller workplaces (M = 1.27; SD = 1.80),  $t(121) = 2.19, P = .03$ . For example, 84% of larger workplaces had at least 1 program, compared to 48% of smaller workplaces. Programs that included coaching or counseling for stress or depressions were significantly greater in larger compared to smaller workplaces.

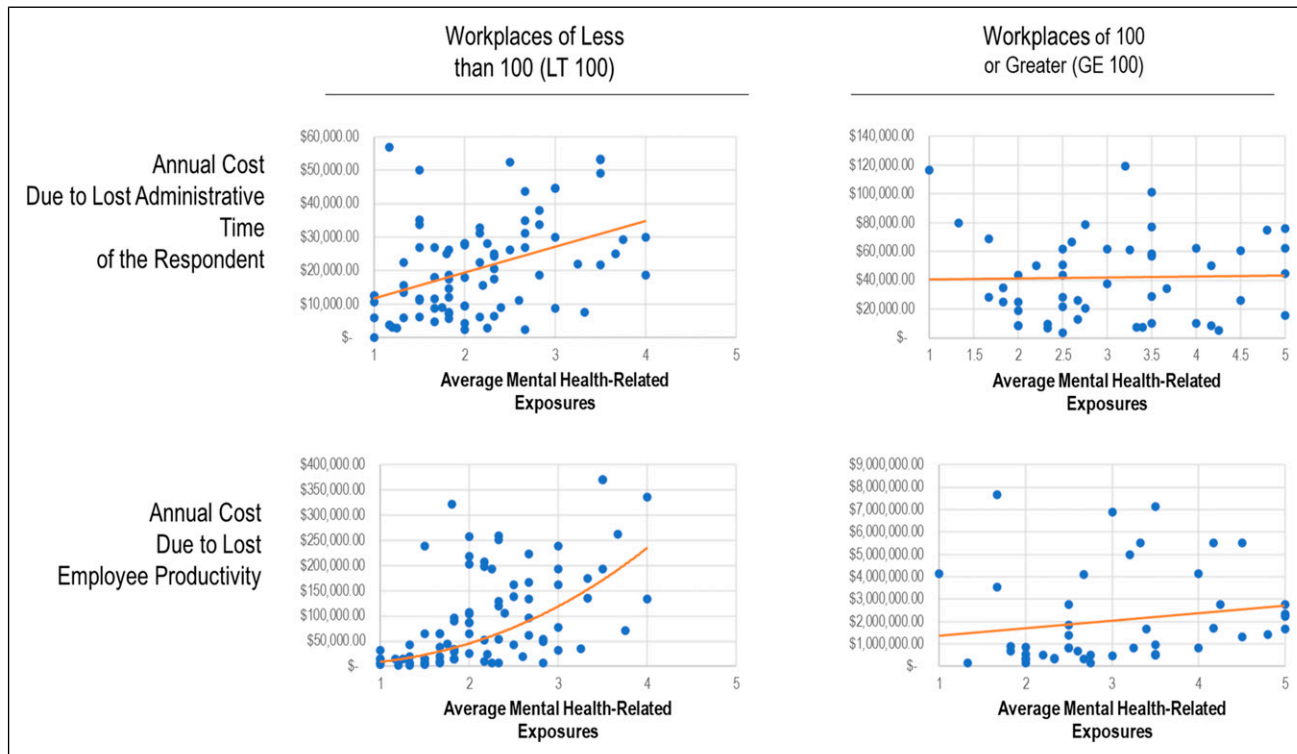
### Programs as Moderators

GLM analyses were conducted with workplaces of varying size to estimate the degree that the presence of MHR programs lessened productivity losses and related financial estimates due to those exposures. All analyses showed a significant interaction between exposures and programs ( $P < .05$ ). Figure 4 illustrates these effects.

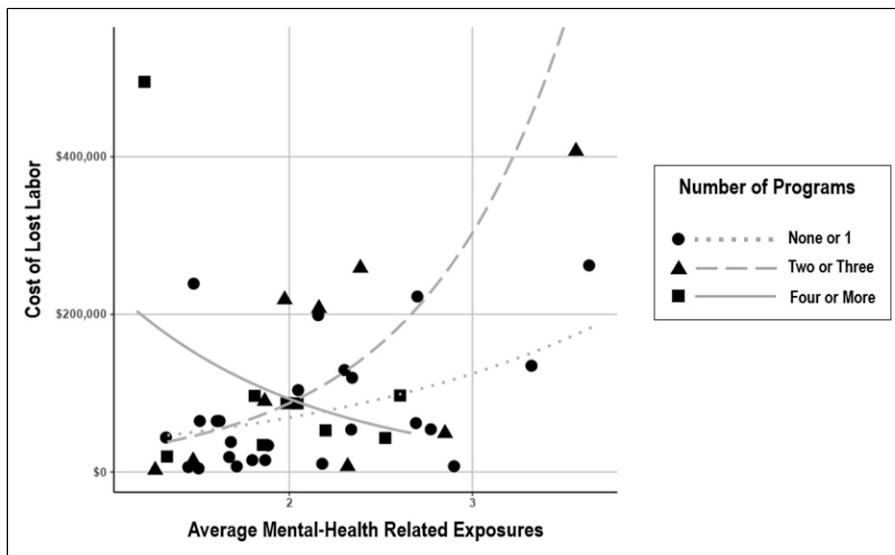
Based on predicted values from this model, a business would see a cost reduction of roughly \$375,738, if a highly-exposed business had all suggested programs in place. This estimate was obtained by using the GLM to predict the cost of 2 new (simulated) cases with an average exposure rating of 3.5, 1 with no programs and 1 with all 9 programs. Considering the small sample and relatively weak predictive power of the model, this estimate will vary across businesses and likely does not reflect the true reduction in cost.

## Discussion

Our study found that larger workplaces experience greater financial burden due to mental health concerns in their workforce. However, smaller workplaces appear more vulnerable—having relatively more mental health-related costs despite small exposures. Small businesses appear more likely to become increasingly vulnerable as concerns accumulate. While leaders in larger organizations are likely more removed from direct contact with MH problems and also have more



**Figure 3.** Scatterplots Showing Relationship Between Cost Variables and Average Mental Health-Related Exposures. Note. Outlying Cases Were Removed From Scatterplots.



**Figure 4.** Plot Showing Interaction of MHR Exposures and Number of Programs When Predicting Lost Employee Productivity Costs in Smaller Organizations Discussion. Note. GLM Model did not converge; last iteration shown. Graph removes any cases where cost equal 0\$.

resources to buffer against greater MH exposures, those in smaller workplace appear more likely to benefit with more added MHR programs. Accordingly, we hope these data encourage others to continue to assess vulnerability, as well as explore ways to improve utilization of MH programs, in smaller workplaces.

The study has several limitations. Results from a Central New York convenience sample is not necessarily generalizable to other

locations. This paper may be best considered part of a broader capacity-building effort to report survey results to the stakeholder community that helped to design the survey. Given these limitations and intent, the results make a compelling argument to pursue more rigorous assessments.

Our project offers one step toward communicating organizational stakeholder perceptions across networks (eg, government, community

organizations, healthcare and wellness providers). Networks in local communities may foster interaction and enhance stakeholder valuation of wellness.<sup>13</sup> These networks, in turn, can promote the importance of mental health related programs in the workplace, especially for small businesses.

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