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# Barriers to Mental Health Service Use Among Workers With Depression and Work Productivity

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**Objective:** This article estimates the decrease in workplace productivity losses associated with removal of three types of barriers to mental health service use among workers with depression. **Methods:** A model of productivity losses based on the results of a population-based survey of Canadian workers was used to estimate the impact of three types of barriers to mental health service use among workers with depression. **Results:** Removing the service need recognition barrier is associated with a 33% decrease in work productivity losses. There is a 49% decrease when all three barriers are removed. **Conclusions:** Our results suggest recognizing the need for treatment is only one barrier to service use; attitudinal and structural barriers should also be considered. The greatest decrease in productivity losses is observed with the removal of all three barriers.

Major depressive disorder significantly impacts work productivity.<sup>1-4</sup> One of the ways in which work productivity losses could be curtailed is through mental health treatment.<sup>5</sup> For example, a population-based study of Canadian workers found that those with moderate and severe depressive episodes who accessed mental health treatment were more likely to be highly productive than workers with moderate and severe depressive episodes who did not have mental health treatment.<sup>5</sup> This suggests there is an intersection between health services and the workplace. For instance, one of the ways that employers have addressed mental health problems is by providing employees access to services through health care benefits (eg, prescription drug coverage and counseling) and programs (ie, employee assistance programs).

Although there is evidence that the treatment of depression can reduce productivity losses, there is also evidence that a significant proportion of workers with depression do not use mental health services.<sup>1,5</sup> In the general population, about 55% of people who meet the criteria for a Diagnostic and Statistical Manual, 4th revision, disorder do not use services.<sup>6</sup> Similar patterns of non-use have been

observed in the working population. Birnbaum et al<sup>1</sup> reported that 56% of US workers with a major depressive disorder use treatment.<sup>1</sup> Despite having a publically funded health care system that covers physician-provided mental health services, analogous patterns have been observed among Canadian workers. Estimates suggest that 57% of Canadian workers with a moderate depressive episode and about 40% with a severe depressive episode do not use treatment.<sup>5</sup> These results suggest that cost alone may not be the most critical barrier to service.

Indeed, Mojtabai et al<sup>6</sup> identified three types of service use barriers within the general population. One was the lack of recognition that help is needed. Another was related to structural factors including finances, availability of services, and the convenience of using services. The third type was related to attitudinal factors such as wanting to handle the illness independently, perceiving that treatment was ineffective, not perceiving a need for services, and fear of stigma. They found that attitudinal barriers were more common than structural barriers. Of these attitudinal barriers, the desire to handle the illness independently was the most endorsed reason for not accessing treatment.

Thus, the literature indicates that in the general population, there exists a lack of recognition for needed help as well as internal and external barriers to services for people with mental health disorders. There is also a large proportion of workers with mental disorders who do not use services. Given the impact of mental disorders on the workplace and the significant effects of treatment, are there ways that employers could address this gap? To answer this question efficiently, it will be important to understand the relative importance of the factors that contribute to the gap. Which barriers should we prioritize for action? Are they lack of recognition, structural, attitudinal, or all three? The answer to this question will be useful in designing programs to help employees increase the use of treatment. The purpose of this article is to estimate the impacts on work productivity of the three types of barriers at which interventions could be targeted to increase mental health service use among workers with depression.

## METHODS

### Population

This study is based on a sample of 2219 adults who were identified through random digit dialing who either completed a telephone questionnaire that was administered by professional interviewers ( $n = 2145$ ) or a web-based survey ( $n = 74$ ) during the period from October 2013 to January 2014. People who were between 18 and 65 years old and living in Ontario and had been in the workforce during the 12 months preceding the survey were eligible for inclusion. This project was reviewed by the Centre for Addiction and Mental Health's Research Ethics Board.

### Variables Used in the Analyses

From the results of the survey of Ontario workers, the following variables were used: (1) the proportion of workers who have depression, (2) the proportion of workers with a perceived need and use mental health services, and (3) the productivity loss related to depression.

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The authors declare no conflicts of interest.

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### Depression Measure

The Patient Health Questionnaire-8 (PHQ-8) was used to collect information about whether a worker was currently experiencing a depressive episode.<sup>7</sup> The PHQ-8 was developed for use in population surveys as a depression measure. It is an eight-item scale that has been validated using a general population sample and has been shown to have good sensitivity and specificity for depression.<sup>7</sup> An indicator variable for depression was created on the basis of the total PHQ-8 score. A score that was 5 or more indicated the presence of depression.

### Perceived Need and Use of Services Indicators

Questions were asked about the respondent's mental health service use. These questions were adapted from Statistic Canada's *Canadian Community Health Survey 1.2*.<sup>8</sup> Respondents were asked about their past 12-month perceived need and use of services for their emotions or mental health. The services included information about mental illness and its treatments, medication, psychotherapy, counseling, medical treatment, and help with an addiction problem.

### Unrecognized Need for Services

A variable to indicate whether there was an unrecognized need for services was created. A need for services was considered to be unrecognized if the respondent (1) had a PHQ-8 score 5 or more and (2) did not indicate a perceived need for any services.

### Reasons for Unmet Need for Services

When respondents indicated that they did not receive the services for which they perceived a need, they were asked for the reason. Using these responses and following the example of Mojtabai et al.,<sup>6</sup> two indicator variables were created to capture whether the reason for unmet need was related to (1) a structural barrier or (2) an attitudinal barrier. The responses categorized as structural barriers were (1) did not have time, (2) could not afford it, (3) did not have any place accessible to get help, and (4) health provider did not follow up. Attitudinal barriers included (1) preferred to manage by self, (2) did not think anything could help, and (3) afraid to ask for help or what others would think.

### Work Productivity Loss

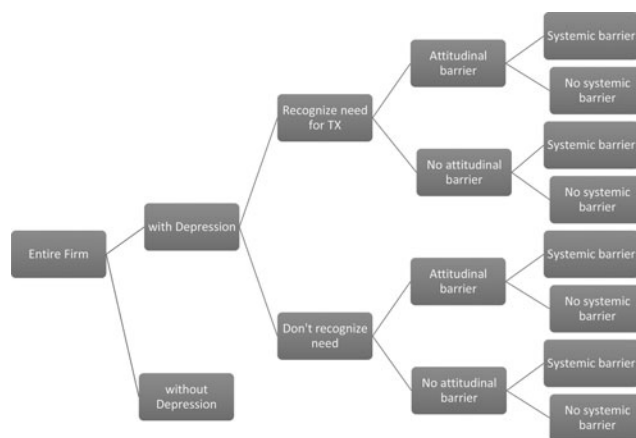
The Work Limitations Questionnaire<sup>9</sup> was used to measure productivity loss. The 25-item Work Limitations Questionnaire has a 2-week recall period. It focuses on four dimensions of work: (1) limitations handling time, (2) physical limitations, (3) mental-interpersonal limitations, and (4) output demands limitations. It has been validated using objective productivity measures in two populations: (1) employees at a durable goods distributor and (2) employees at call centers.<sup>10</sup>

A productivity score was calculated on the basis of the four subscale scores using an algorithm described in detail elsewhere.<sup>11</sup> The productivity score represents the additional productivity loss attributable to depression.

### Analyses

Figure 1 illustrates the main features of the model we developed to study key barriers at which interventions could be targeted to increase the use of services among workers with depression. The model begins with whether or not a worker has depression. For workers with depression, there are three main areas an intervention could address: (1) identification of the need for services (ie, recognition), (2) attitudinal barriers to service use, and (3) structural/systemic barriers to service use.

The values of the parameter estimates are primarily taken from the survey results. The survey results as they are incorporated in the analysis are presented in Table 1 in the Results section. The remaining data requirements are met by using estimates reported in



**FIGURE 1.** The model used to study key barriers at which interventions could be targeted to increase the use of services among workers with depression. The key barriers an intervention could target to increase the use of services by workers with depression are: (1) recognizing the need for services, (2) attitudinal barriers to service use, and (3) systemic barriers to service use.

the literature and by varying these estimates in a sensitivity analysis. Table 1 lists key formulas and Table 2 explains the source and values for main model parameters.

### Base Case

The model begins by assuming there is a company of 2095 employees and 38.1% of the employees have a depressive disorder (ie,  $P_D = 0.381$ ). We follow this cohort of workers for a year and assume there were three main barriers that could prevent an individual with depression from getting treatment: (1) recognition of need for treatment barriers, (2) attitudinal barriers, and (3) structural barriers. For people with depression who did not receive treatment, we assumed there would be productivity losses equal to 0.181988, on the basis of the survey sample results. We assumed for each worker with treated depression, there would be productivity losses of 0.146988. This value is 0.035 less than the productivity loss estimate for those who did not receive treatment; the decrement is suggested by the “Change” results reported in Table 1 in Lerner et al.<sup>12</sup> In other words, workers receiving treatment were assumed to be working at 0.853012 full time equivalent (FTE) status and workers not receiving treatment were assumed to be working at 0.818012 FTE status. On the basis of estimates of the length of depressive episodes from the literature, the losses from depression were assumed to last 90 days for treated employees<sup>13</sup> and 183 days for untreated employees.<sup>14</sup> Each workday was assumed to be 7.5 work hours, and on the basis of the median hourly rate for Ontario, workers were assumed to receive an hourly rate of \$25.78.<sup>15</sup> Thus, an employee with untreated depression would incur a productivity loss computed as  $0.181988 \text{ FTE loss} \times 7.5 \text{ hrs/FTE} \times \$25.78/\text{hr} \times 183 \text{ day} = \$6439.29$ . In contrast, an employee with treated depression would incur a productivity loss equal to \$2557.81 (ie,  $0.146988 \text{ FTE loss} \times 7.5 \text{ hrs/FTE} \times \$25.78/\text{hr} \times 90 \text{ days} = \$2557.81$ ). As a sensitivity analysis, we varied key probability estimates and FTE loss assumptions.

Productivity losses were considered for eight scenarios. In one scenario, all three barriers were present. In three scenarios, one barrier was removed such that two others remained (eg, no recognition barrier and only attitudinal and structural barriers, no structural barrier and only recognition and attitudinal barriers). In another three scenarios, two barriers were removed such that one remained (eg, neither recognition nor attitudinal barriers and only structural barrier, neither structural nor recognition barriers and only

**TABLE 1.** Formulas Used in the Analysis of a Firm With 2095 Employees\*

Depressed Employees Affected	Quantity of Employees	FTE Loss	FTE Loss, \$
Treated	$N \times P_D \times P_{\text{Treatment}}^\dagger$	$\frac{\text{Hours}}{\text{Day}} \times \frac{\text{FTE lost}}{\text{Hour}} \times \frac{\text{Days}}{\text{Episode}} \times \frac{\text{Wage in \$}}{\text{Hour}}$	
Base case estimate	304	≈ 99 hrs	99 hrs × \$25.78
Not treated	$N \times P_D \times (1 - P_{\text{Treatment}})$		
Base case estimate	495	≈ 250 hrs	250 hrs × \$25.78

\*Table 2 has the variable definitions, values, and sources.  
 $\dagger P_{\text{Treatment}} = \bar{P}_R \times (\bar{P}_A | \bar{P}_R) \times (\bar{P}_S | \bar{P}_R \& \bar{P}_A)$ .  
 FTE, full time equivalent.

**TABLE 2.** Estimates Used in the Analysis

Variable Description	Variable Name	Base Case Value	Source
To compute quantity of depressed employees			
Number of employees	$N$	2095	Survey sample size
Probability of depression	$P_D$	799/2095 ≈ 0.381	Survey results
To compute quantity of treated and untreated employees			
Probability of a recognition barrier (employee does not recognize need for treatment)	$P_R$	422/799 ≈ 0.53	Survey results
Probability of NO recognition barrier	$\bar{P}_R$	$(799 - 422)/799 = 377/799 \approx 0.47$	Survey results
Probability of an attitudinal barrier (employee does feel able to get treatment) given NO recognition barrier	$P_A   \bar{P}_R$	44/377 ≈ 0.12	Survey results
Probability of NO attitudinal barrier given NO recognition barrier	$\bar{P}_A   \bar{P}_R$	$(377 - 44)/377 = 333/377 \approx 0.12$	Survey results
Probability of a systemic barrier (system will not treat employee) given NO other barriers (eg, attitudinal or recognition)	$P_S   \bar{P}_R \& \bar{P}_A$	29/333 ≈ 0.09	Survey results
Probability of NO recognition barrier given NO other barriers (eg, attitudinal or recognition)	$\bar{P}_S   \bar{P}_R \& \bar{P}_A$	$(333 - 29)/333 = 304/333 \approx 0.91$	Survey results
To compute FTE loss related to depressed employees			
Hours in a workday	$\frac{\text{hrs}}{\text{d}}$	7.5	Assumption
Productivity lost (1 FTE = no productivity lost)	$\frac{\text{FTE lost}}{\text{hr}}$	0.147 with treatment 0.182 without	Lerner et al <sup>12</sup> and Posternak and Miller <sup>14</sup>
Length of an episode of depression	$\frac{\text{d}}{\text{Episode}}$	90 with treatment 183 without	Furukawa et al <sup>13</sup>
Hourly wage	$\frac{\text{Wage in \$}}{\text{hr}}$	\$25.78	Assumption based on <a href="http://www.statcan.gc.ca/tables-tableaux/sum-som/101/cst01/labr69a-eng.htm">http://www.statcan.gc.ca/tables-tableaux/sum-som/101/cst01/labr69a-eng.htm</a>

FTE, full time equivalent.

attitudinal barrier). Finally, the last scenario has all three barriers removed.

**RESULTS**

**Description of the Sample**

Of the total survey respondents, about 34.3% ( $n = 797$ ) were male and 65.6% were female ( $n = 523$ ). The majority of the sample were between 40 and 59 years ( $n = 507$ ), and 24.8% ( $n = 197$ )

had a high school education or less. The majority was white (86.2%,  $n = 605$ ). The largest occupational groups were management (13.3%,  $n = 105$ ), professionals (33.6%,  $n = 265$ ), support staff (15.5%,  $n = 122$ ), and administration (11.8%,  $n = 93$ ). In the sample, 38.1% ( $n = 799$ ) of respondents were currently experiencing depression.

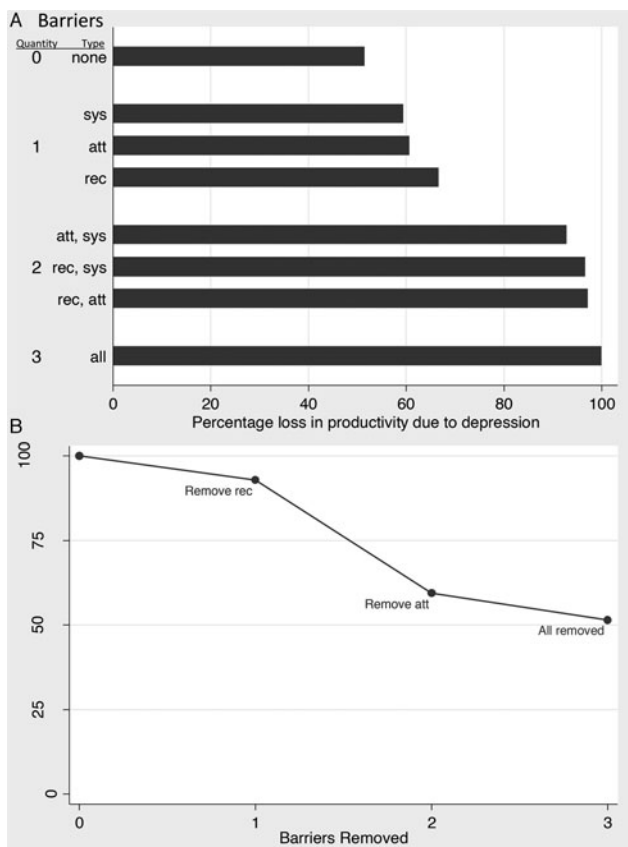
**Perceived Need and Use of Services Indicators**

Of the workers who had depression, 52.8% ( $n = 422$ ) did not recognize a need for services whereas 47.2% ( $n = 377$ ) did recognize

a need. Overall, 5.5% of the workers with depression experienced an attitudinal barrier ( $n = 44$ ) and 4.8% experienced a structural barrier ( $n = 38$ ). Of those who recognized a need for services, 11.7% ( $n = 44$ ) indicated that they did not use services because of an attitudinal barrier whereas 88.3% ( $n = 333$ ) of those who recognized a need did not have such a barrier. Of those who had an attitudinal barrier, 20.5% ( $n = 9$ ) also had a structural barrier and 79.6% ( $n = 35$ ) did not. Of those who did not have an attitudinal barrier, 8.7% ( $n = 29$ ) also had a structural barrier whereas 91.3% ( $n = 304$ ) did not.

**Estimate of Decreases in Productivity Losses**

The last bar in Fig. 2A shows that the largest productivity loss is associated with the presence of all three barriers. In this scenario,



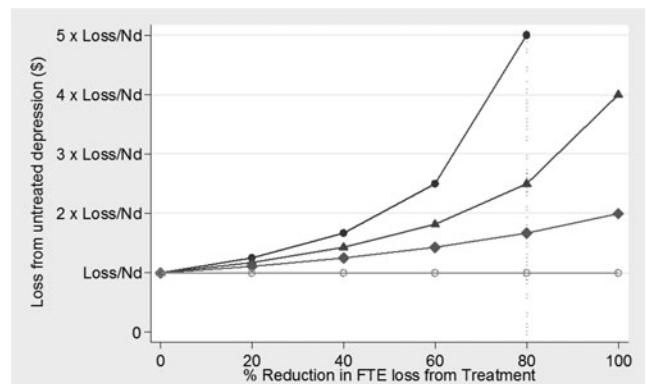
**FIGURE 2.** (A) Trade-off between productivity loss and number/type of barriers (att = attitudinal barriers to service use; rec = recognizing the need for services; sys = systemic barriers to service use). The first bar shows that the smallest productivity loss is associated with the absence of all three barriers. The last bar in Fig. 2A shows that the largest productivity loss is associated with the presence of all three barriers. As the number of barriers is reduced, there is an associated reduction in productivity loss. (B) The optimal order to remove barriers to attain the greatest decrease in productivity loss. The largest percentage decrease in losses occurs when the rec barrier (rec = recognizing the need for services) is first removed. The next largest percentage decrease in losses occurs when the att barrier (att = attitudinal barriers to service use) is removed. When all three barriers are removed, the productivity losses decrease by 48.5% relative to the losses incurred when all three barriers are present.

there was an estimated loss of 153,802 FTEs, which translates into a \$3.97 million productivity loss. As the number of barriers is reduced, there is an associated reduction in productivity loss (Fig. 2A).

Figure 2B shows how the greatest decrease in losses can be achieved; the largest percentage decrease in losses occurs when the service need recognition barrier is first removed. When only attitudinal and structural barriers remain, there is a 33% decrease in productivity losses. In the scenarios in which two barriers are removed, a 41% decrease is observed when only systemic barriers remain. Finally, when all three barriers are removed, the productivity losses decrease by 48.5% relative to the losses incurred when all three barriers are present.

**Sensitivity of Estimates With Changes in Treatment Effectiveness**

The magnitude of productivity losses from untreated depression is affected by the interaction between the effectiveness of treatment in reducing productivity losses and the likelihood a worker accesses treatment. Figure 3 presents the results of a sensitivity analysis estimating the productivity losses of treatment versus no treatment while varying the effectiveness of treatment. The results indicate that as the effectiveness of treatment increases, the loss from untreated depression increases in a nonlinear way. For example, comparing two organizations in which one has 100% treatment and one in which none of the workers gets treatment and treatment is 80% effective, the productivity losses experienced by the organization in which no one accesses treatment is five times the loss of the other organization. As the effectiveness of treatment in reducing productivity losses decreases, the magnitude of the comparative loss decreases.



**FIGURE 3.** Four curves to illustrate different situations related to the probability that a worker with depression will receive treatment for depression: (1) shaded circle = 100% of workers with depression get treatment; (2) triangle = 75% of workers with depression get treatment; (3) diamond = 50% of workers with depression get treatment; (4) hollow circle = 0% of workers with depression get treatment. The “effectiveness” of treatment is considered along the horizontal axis going from no treatment benefit to 100% reduction in FTE loss from depression treatment. The vertical axis indicates the loss from untreated depression in dollars. The vertical line at 80% on the horizontal axis shows that if treatment can reduce FTE loss by 80%, then there is a fivefold difference in the loss from untreated depression comparing firms where no one receives treatment to firms where everyone receives treatment. The curvature of the lines reflects an interaction between the effectiveness of reducing depression’s burden and the likelihood that employees will receive treatment.

## DISCUSSION

The survey results describe the barriers to treatment that workers experience. They suggest that the greatest barrier is related to the recognition of the need for services. Our results also suggest that of the three barriers, removal of the recognition barrier is associated with the largest decreases in productivity losses.

In our sample, more than half of the workers who were experiencing a depressive episode did not recognize a need for treatment. Similar rates have been observed in general population surveys conducted in the United States (55%) and Australia (42%).<sup>6,16</sup> These findings suggest that the recognition of the need for treatment among people with depression is a challenge with which there has been a struggle in a number of countries. Nevertheless, there is evidence that public mental health literacy campaigns such as *beyondblue* have been effective at increasing rates of recognition for treatment need.<sup>16,17</sup>

Our results also suggest that the solution that would lead to greater use does not necessarily solely rely on increasing the recognition of need. As with Mojtabai et al.,<sup>6</sup> we observed that recognition is only one hurdle. That is, in the absence of a recognition barrier, there are still those who face either attitudinal or structural barriers or both. This indicates the challenge is more complex than simply helping people recognize their need for treatment. Indeed, the greatest decrease in productivity losses is observed when all three barriers are removed.

One of the attitudinal barriers to treatment is the belief that people can deal with depression on their own.<sup>17,18</sup> Another related attitudinal barrier is the belief that treatment does not help.<sup>19,20</sup> Mental health literacy campaigns have been one of the ways in which attitudes regarding treatment have been addressed.<sup>17,21</sup> Nevertheless, the effectiveness of these campaigns does not seem to be comprehensive. Results by Jorm and colleagues<sup>17,22</sup> suggest that Australia's *beyondblue* resulted in a larger proportion of the general population, recognizing that treatment is helpful for depression. Nevertheless, Crisp et al.<sup>21</sup> observed that despite the UK's *Changing Minds* campaign, those who knew someone with depression were less likely to expect a positive outcome for depression. It may be that formal training such as *Mental Health First Aid* could serve as an effective addition to the campaigns.<sup>23</sup> As Mojtabai et al.<sup>6</sup> suggest, it may be important to also help people understand the different types and effectiveness of available treatments; these types of messages could be relayed by health care professionals.

Structural barriers also potentially stand in the way of treatment use. These barriers include affordability and accessibility with regard to time. Indeed, economic principles suggest that scarce resources such as money (ie, out-of-pocket costs) and time are barriers to access. Public health care systems and employers have helped to decrease the monetary costs by providing insurance coverage for treatments. Beyond insurance, other barriers such as waitlists, hours of provider availability, and working hours can create time prices that affect access to care. The health care system can decrease time prices by changing hours of provider availability and decreasing waiting time. Employers can also decrease time price by allowing flexibility in working hours, so workers can attend health care visits.

## Limitations

The results of these analyses should be considered in light of the limitations of the data. The data were drawn from a sample of employed people in Ontario. Thus, the data are generalizable to other jurisdictions to the extent to which the employed populations within those entities are similar with respect to availability of services and attitudes. For example, if there were no attitudinal barriers, a campaign focusing on attitudes would not lead to increased use. Likewise, if recognition is not a significant barrier, focusing on it would not lead to the large productivity decreases that we estimated.

Also, our use of a PHQ cutoff of five or more resulted in the inclusion of people with "mild" depression. There is evidence that there is an association with severity and service use.<sup>1,5</sup> Thus, among workers experiencing a more severe episode of depression, there may be a greater recognition and use of services. Nevertheless, it should be noted that people with "mild" episodes should also be monitored by a health care professional.<sup>7</sup> Thus, the decision was made to include them in the sample.

As the sensitivity analysis shown in Fig. 3, our results are sensitive to changes in the effectiveness of the depression treatment. Nevertheless, there is little literature on the effectiveness of depression treatment with regard to work productivity. This is an area that would benefit from more exploration. This line of inquiry could be of interest to employers given that they often provide pharmaceutical insurance and counseling benefits to employees. Thus, it would help inform their decisions about medication and other related types of benefit coverage.

Finally, our model is conservative in that we focus on productivity losses rather than societal costs. As such, we do not consider costs related to health care use, sickness absences, and caregiver costs. To gain a comprehensive understanding of the effects of treatment barriers on workers and employers, it will be important for future research to consider these costs.

## CONCLUSIONS

The use of treatments is one of the ways in which the workplace burden of depression could be decreased. Nevertheless, there are a large proportion of workers with depression who face barriers to service use. These barriers include a lack of recognition for needed help, attitudes, and structural factors. Of the three types of barriers, lack of recognition seems to be the most significant. Nevertheless, the greatest reduction of productivity losses can be achieved by addressing all three. But, the solution requires the government, health care system, and employers acting in concert to help workers overcome these barriers to care.

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