Depression and the Workplace: A Progress Report

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There has been considerable interest recently in the relationship between depression and the workplace. This interest is driven by the growing recognition that depressive disorders are highly prevalent in the workplace and have an enormously negative impact on performance, productivity, absenteeism, and disability costs. A variety of clinical research with occupational-related samples has helped to define those at risk for depression and has led to a better understanding of the overlap of the construct of clinical depression with more longstanding occupational health and organizational psychology models such as stress, burnout, and job satisfaction. From an employer perspective, depression's impact remains largely unmitigated due to stigma, uncertainty about treatment's cost effectiveness, and lack of effective interventions delivered in a workplace setting. Progress in these areas is reviewed with suggestions for future directions.

Introduction

Workplace mental health has garnered increasing attention over the past decade. This interest has been driven by factors such as increased awareness of mental health issues in the general population, improved understanding of how mental disorders impact functioning, and the industrial world's transformation from brawn- to brain-based economies.

Mental illness accounts for 15% of the burden of disease in established market economies such as those in North America [1]. Mental illness' negative effects on the workplace are substantial and include reduced performance and productivity and increased absenteeism and disability costs. Of all psychiatric disorders, depression—including major depressive disorder (MDD), bipolar depression, dysthymic disorder, and seasonal affective disorder—is particularly interesting due to its high prevalence, early adulthood onset, episodic and chronic nature, and impact on social and cognitive functioning. From an employer's perspective, depression's impact remains largely unmitigated due to stigma, uncertainty about treatment's cost effectiveness, and lack of effective interventions delivered in a workplace setting [2,3,4•,5]. Given the problem's scope and the recent emergence of a much better understanding of depression's impact in the workplace and what to do about it, our review focuses on depressive disorders' effect on the workplace. We focus on recent progress and suggest future directions.

Studies focusing on depression and work generally have been of one of two designs: 1) general population samples with specific question modules to assess work functioning and 2) working population samples with specific measures for mental illness. For mental health researchers, the workplace is a challenging laboratory but generally has confirmed many of the associations found in general population studies. Given the high degree of cooperation required by employers, not all employment types or groups have been sufficiently studied or have included insurance or organizational data. Also, employee or disability claimant participation rates generally are low when compared with clinical samples.

Prevalence in the Workplace

The lifetime prevalence of major depressive episode is well established, with approximately 5% of the general population reporting an episode within the past year. Well-documented relationships exist among depression, having a chronic medical condition, unemployment, and lower income. Depression is associated with reduced rates of labor force participation in men and women (46.4% and 28.6%, respectively) [2]. Most importantly, depressive episodes affect working individuals early in their careers and remain prevalent throughout the working years [3].

Annual prevalence rates in working populations have been found to be 6.4% for MDD and 1.1% for bipolar disorder [4•]. Two-week prevalence rates in the US workforce are estimated to be 3.6% for dysthymia and 3.4% for MDD, with 2.4% of individuals experiencing residual

or recurrent symptoms for a total of 9.4% [5]. Among screened workers on sick leave for any reason, rates of anxiety and depressive disorders are greater than 10% [6•]. Prevalence rates for people on disability leave are much higher. For example, Leon et al. [7] reported that 34% of medically ill disability claimants met criteria for MDD or dysthymia using a brief depression screen followed by structured interview [7].

Exposure to physical and psychological trauma is inherent in many occupations (military, police, fire, ambulance), with depressive disorders emerging independently or concurrently with other disorders, including posttraumatic stress disorder (PTSD). After serious accidents, such as motor vehicle accidents, MDD is as prevalent at 6 months (9.6%) as full and subsyndromal PTSD, although PTSD typically emerges earlier [8]. Among soldiers returning from combat, high rates of depression (approaching rates of PTSD [9,10]) have been observed.

Economics of Depression

With more precise measurement of direct and indirect costs, workplace depression's economic impact has become better understood recently. For the employed, direct measures—such as absenteeism, disability, and treatment costs—can be well quantified based on administrative data. Other factors, which are likely important but also more difficult to quantify, include lost economic opportunity resulting from depression (eg, underemployment, missed promotions or overtime, shifting from full-time to part-time, and depression's burden to families or society at large [11]). Also, research on illness costs has shifted to a human capital approach that also considers lost employee earnings. One important finding to emerge from these analyses is that when considering a variety of direct and indirect measures of depression's cost in the workplace, treatment cost is always a small fraction; it provides an excellent return on investment for employers, private insurers, and public health care systems through increased productivity and higher rates of sustained employment [11,12].

Other significant developments over the past several years include efforts made to describe and quantify depression's indirect costs in the workplace, including presenteeism (the problem of workers being on the job but, because of medical conditions, not fully functioning) and increased staff turnover. This has led to estimates that depression's annual cost in the United States is approximately $26.1 billion for medical care, $5.4 billion for suicide-related mortality, and $44.0 to $51.5 billion for lost productivity [5,13,14]. Taking into consideration other common and disabling mood and anxiety disorders, the cost is much higher. For example, the cost of bipolar disorder, primarily due to associated depressive episodes, recently has been re-examined using National Comorbidity Survey Replication data. Although less prevalent than MDD, bipolar disorder was associated with more than twice as many lost work days (65.5 vs 27.2) due to presenteeism and absenteeism [4•]. Despite intensive treatment, individuals with bipolar disorder spend as much as one third of their time depressed. Such findings underscore the costly impact of all mood and anxiety disorders [15].

Associated Concepts

There has been a movement toward integrating several well-established constructs in organizational psychology and occupational health with current understandings of clinical depression. For example, the Job Demand-Control model, which accounts for job strain as a function of psychological demands, perceived control, and social support, has been predominant in occupation research for the past two decades. Somewhat surprisingly, the association between job strain and depression had not been well established until very recently [16]. Similarly, the construct of "burnout," first described by Maslach and Jackson [17] in 1981 as a syndrome of emotional exhaustion and cynicism, continues to be studied in isolation using the Maslach Burnout Inventory. This is despite compelling evidence that burnout as a construct is an important mediator of the association between job strain and depression [18•].

The typical primary outcome measures in treatment studies of depression to date have been symptom reduction and remission rates (ie, "feeling better"). However, an interesting and growing body of knowledge has accumulated from researchers and included outcome measures more typically associated with rehabilitation, such as cognitive or functional restoration (ie, "doing better"). Integrating treatment and rehabilitation goals better remains a key strategy in managing workplace impairment and disability; for mental health professionals treating depression, remission and functional recovery have become key outcomes [19,20].

Considering clinical, economic, and workplace factors, we review developments regarding depression in the workplace from the workers' and employers' perspective. In doing so, we hope to identify key areas in need of further understanding in the context of a complex and evolving occupational mental health system (Fig. 1).

Employee Aspects

Stress and depression

Stress continues to be a commonly used construct in occupational medicine, but the association between stress and depression in the workplace had not been well studied until recently [21]. Using longitudinal data from a Canadian National Health Survey, Wang [22] found significant associations between sources of perceived stress, including skill discretion, psychological demands, job insecurity, social support from coworkers or supervisors, and major

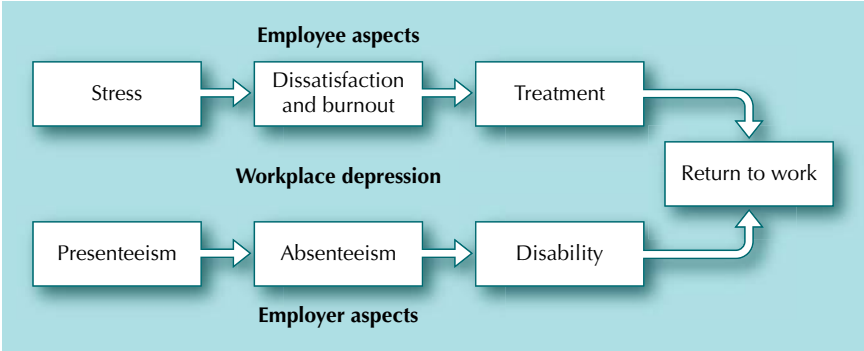

Figure 1. Important issues for workplace depression.

depression onset. As is true for depression in general, significant gender differences have emerged. For example, Shields [23•] found that women report being in high-strain jobs more often, but for them, only low coworker support is significantly associated with depression. Men in high-strain positions are 2.5 times more likely to have experienced a depressive episode compared with those in low-strain positions, whereas women are 1.6 times more likely [23•]. In a Finnish working population, high job demands and strain are associated with increased risk for depression and increased future use of antidepressant medications, but only in men [24].

Supporting the idea that stress is an important etiologic factor, it has been demonstrated that a strong association (odds ratio = 2.3) exists between workplace bullying and the development of depression among hospital employees. Interestingly, depression also predicted new bullying cases, possibly due to increased hostility in the work environment [25,26]. Overall, exposure to chronic work stress appears to amplify the negative effects of psychiatric and physical disorders and is associated with higher disability rates [27]. Conversely, increasing decision latitude and support from coworkers or supervisors can buffer job strain's negative effects [23•].

Job dissatisfaction, burnout, job loss, and depression

It comes as no surprise that in a recent, large population study, workers in high-strain jobs reported more stress and job dissatisfaction. For both genders, those in service, processing, and manufacturing positions were most unhappy on the job. Job stress, shift work, and lower income were all factors associated with job dissatisfaction. Job dissatisfaction was associated with higher levels of perceived stress, poorer perceived mental health, and increased disability days [23•]. These findings suggest that measuring job dissatisfaction in the workplace may be a useful marker for depression.

Burnout has been a favored concept in research on mental health and disability in certain occupations, most notably health care professionals. A significant overlap between burnout and depression and/or dysthymia seems likely but has not been systematically studied. Among Finnish employees, burnout was strongly associated with strain and was believed to mediate the relationship between strain and depression. Compared with low-strain positions, high strain was associated with 7.4 times higher odds of burnout, 3.8 times higher odds of depressive symptoms, and 1.7 times higher odds of depressive disorders [18•]. Support for an intermediary role of burnout also had been found prospectively in a cohort of dentists [28]. As for job satisfaction, measures of job strain and burnout may have some use as markers for high risk for clinical depression. However, no data exist on whether proactively intervening in cases of "burnout" reduces subsequent depression risk.

Depression is a risk factor for job loss and subsequent unemployment. Depressed employees observed over 6 months have four to five times more new unemployment compared with those with other chronic illness such as rheumatoid arthritis. Also, depression results in increased job turnover rates, with the most common result being that the affected individual takes a lower-paying job. Factors suspected to influence job loss for depressed individuals include poor job performance, discrimination, job accommodation barriers, and treatment quality [13]. Similar findings have been described in previously healthy young adults observed prospectively, with unemployment and loss of income greatest in those already disadvantaged [29].

Workplace factors are clearly important in depression onset, and depression is a risk factor for suicide. Unemployment remains an independent risk factor for suicide, emphasizing the need to provide and use employment services for individuals disabled due to depression. Even among physicians, depression rates are similar to those of the general population and represent a major risk factor for suicide. Work factors identified as risk factors for suicide in physicians include personal and professional losses, financial problems, a tendency to overwork, and career dissatisfaction [30].

Stigma and discrimination

Are attitudes toward depression moving toward acceptance in the workplace? According to workplace-based surveys, most working individuals say that they would be comfortable discussing depression with their physician, but only a minority would feel comfortable discussing depression with their supervisor [31]. Unfortunately, even professionals such as working physicians being observed by psychiatrists

can be subject to discrimination by overseeing bodies due to invasive policies. Others are hesitant to seek treatment due to often well-founded concerns about confidentiality, stigma, and fear of documentation [30].

Detection rates for mood disorders in primary and occupational health care settings are likely affected by workers' willingness to disclose mental health problems and physical concerns. This discrepancy may be more pronounced in men than women. Additionally, differential outcomes, such as employment, have been observed in depressed minority patients as compared with nonminority patients. This appears to be largely influenced by the nature of treatment received and acceptance of treatment, suggesting the influence of cultural and socioeconomic factors [31,32].

Treatment

Most working individuals recognize depression's signs and symptoms and the risk of suicide if untreated [31]. Despite this knowledge, a number of socioeconomic barriers to access, reluctance to seek treatment, and the lack of accessible and evidence-based treatment remain as significant barriers to recovery in depressed workers. For example, treatment acceptability is lowest among low-income working individuals who have not completed high school [27]. Among employed family practice patients with new-onset depression, only 7.0% had received medication, and 5.7% had participated in psychotherapy at 6 months [33]. Individuals on disability may receive more treatment. For example, Dewa et al. [34] reported that 60% of workers, primarily women, receiving depression-related, short-term disability benefits made at least one antidepressant claim and received an evidence-based medication. However, a huge gap exists between filling a prescription and effective treatment. More research is needed regarding the adequacy and effectiveness of the treatment that people on disability receive.

Interventions targeting depression with compelling measures of work-related outcomes are few, and such measures remain underused. Enhanced depression treatment at the primary care level modestly improves work-related outcomes, such as employment rates, lost time, and interpersonal conflict between employees and employers, and requires continual collaboration with psychiatrists, psychologists, and nurse managers [11,35,36]. Rost et al. [37] noted that improvements in primary care depression management have specifically demonstrated the ability to improve productivity by 6.0% and reduce absenteeism by 22.8% in employed patients over 2 years. Enhanced care involved brief training, guideline-concordant pharmacotherapy, patient education, and telephone follow-up by case managers and has improved medication and counseling use and led to more positive clinical and workplace outcomes [37,38••]. For example, four or more psychotherapy sessions within 6 months of a depressive episode have reduced absenteeism by 26.1% over 1 year. Somewhat surprisingly, in at least one study, medication failed to produce significant reductions, possibly due to greater symptom severity. It has been postulated that earlier studies showing medication benefits for absenteeism failed to control for concurrent psychotherapy [33].

Employer Aspects

Presenteeism

Presenteeism, in the form of partial disability days and reduced productivity, remains a major concern, as most individuals experiencing depressive symptoms are working [3,4•,5]. This issue poses several challenges for employers interested in limiting costs due to lost productivity, accidents, conflict, aggression, and potential suicide.

Depressed workers experience broad impairment in many workplace functions and have a 4.2-fold increase in impaired work performance—equivalent to 5 hours of lost work per week [5]. Compared with rheumatoid arthritis, depression was associated with greater performance deficits, including interpersonal task management, time lost, and overall output. Symptom severity certainly is related to impairment. However, clinical improvement does not necessarily result in full recovery of job performance. Most people return to work from disability leave due to depression with some residual symptoms and impairment in functional abilities that require modest accommodations [39]. Unfortunately, the illness' effects can be confused with treatment effects. For example, depressed employees appear to have high awareness of potential risks from insomnia, fatigue, or cognitive impairment due to depression but have difficulty distinguishing symptoms from treatment's effects [40].

Given presenteeism's high cost, it makes economic sense to screen for depression in the workplace and to treat those affected. Unfortunately, systematic depression screening has yet to be sustainably integrated into a workplace setting. However, there recently has been some fairly compelling evidence for the efficacy of a program designed to identify depression and promote effective treatment through the workplace. Wang et al. [38••] reported the results of the evaluation of an enhanced treatment program using a two-stage screening protocol, telephone-delivered monitoring, and in-person psychotherapy. Of those who responded to an e-mail–delivered health risk assessment, approximately 9% screened positive for depression and were invited to participate in the study. After 1 year, individuals assigned to the enhanced treatment arm were working on average 2.6 more hours per week, although no difference was seen in job performance. Although cost effectiveness has yet to be evaluated, the gain in time worked far exceeded the intervention's cost [38••].

Absenteeism and disability

Lost time from work in the form of absenteeism and total disability is the most visible cost of illness in the workplace, with employers spending on average 1.9% of

payroll expenditures on sick leave benefits. Over the past 5 years, short- and long-term disability claims have risen, with depressive disorders accounting for the majority of claims and an increasing proportion of claims over time. Mental health claims generally are highly resource-intensive and comprise the majority of the financial costs to insurance companies or organizations as compared with other disorders [37,41]. Not surprisingly, depressed female employees have higher absenteeism costs because they are more likely than men to use their disability benefits [32].

When it is comorbid with common physical disorders such as lower back pain and myocardial infarction, depression has a profoundly negative influence on return-to-work rates and the proportion of those who can resume full-time duties [42]. Modest increases in depression severity ratings are significant predictors of return to work, suggesting the importance of screening and providing enhanced care to those off work for medical reasons [43]. Furthermore, most individuals granted a disability pension for MDD have comorbid mental disorders or physical disorders, notably musculoskeletal disease [44]. Significant evidence suggests that comorbid pain often is a major contributing factor to physical and depressive symptoms [45,46].

Recognizing depression screening's importance in the context of disability management in general, several depression-screening instruments for employed populations have emerged. The Depression Anxiety Stress Scale has been validated for detecting mental health problems in employees absent from work in an occupational health care setting. This scale consists of three factors—depression, stress, and anxiety—and was helpful in distinguishing employees with adjustment disorders from those with clinical anxiety and depression. Unlike some measures designed for primary care settings, no training is required, and it has high sensitivity for screening [47].

Workplace policies and programs

During the past decade, strategies for establishing effective workplace mental health policies and programs have advanced. The World Health Organization (WHO) has prepared guidelines for developing policies and strategies to improve working individuals' health. Key, modifiable factors identified include those associated with job strain, lack of recognition, inequity, poor interpersonal relationships, poor working conditions, poor leadership and communication, and conflicting home and work demands. The WHO guidelines provide a comprehensive approach to analyzing mental health issues, policy development, implementation, and evaluation [48••].

Evaluated programs targeting depression among employees remain limited. The *Action de Prevention des Rechutes des Troubles Anxieux et Depressifs* (APRAND) program was implemented from 2001 to 2003 and targeted more than 140,000 employees at a French power company. This program involved organized screening of those on sick leave for anxiety and depressive disorders and a health promotion intervention that delivered screening results and psychoeducation and made strong recommendations for treatment by the occupational physician. No direct treatment was provided. Significant improvements in symptom severity and remission rates were observed in those included in the health promotion intervention. The intervention was found to be effective and inexpensive with very low rates of nonparticipation and loss during follow-up [6•]. When considering those at greatest risk, employer-based programs to improve depression management should be targeted at women, those in high-stress positions, and employees with known physical comorbidities [32]. Likewise, identifying and preventing workplace bullying and violence may have positive impacts on employee mental health [25,26].

High-quality medical coverage has the potential to reduce the burden of depression by improving access to specialty care. Being privately insured for mental health services is associated with decreased length of depressive illness as compared with those with no insurance or with public insurance (16.8, 24.9, and 32.3 months, respectively) and is directly related to employment rates [49]. Also, the results of studies of telephone-based outreach and care management for depression are very encouraging [38••]. Similarly, the Internet has the potential to improve access to evidence-based, stepped models of care through the workplace. For example, computerized cognitive-behavioral therapy has been effective for many conditions, including anxiety and depression. Such programs have the potential for enormous reach at very low cost; access to such programs need not be limited by geography or availability of local expertise [50]. The application of such technologies can be relatively straightforward, as most organizations have existing Employee Assistance Programs (EAPs) and information technology infrastructures through which they already deliver a wide range of education and training.

Conclusions

Depressive disorders' impact on workers and organizations continues to be of great and growing interest. Most people with depression are working, but several challenges exist regarding awareness, accepting these disorders as workplace "sicknesses," and establishing effective interventions within an occupational setting. Greater applied research and leadership are needed to establish workplace policies and programs designed to direct impaired workers toward adequate and effective treatment before disability ensues and to assist in timely and safe re-entry into the workplace whenever possible. The rampant underuse of evidence-based treatments continues to be a problem that cannot be substituted with EAP services that most often are constrained by length-of-treatment restrictions and the front-line providers' limited expertise [39]. The potential

for return on investment may provide incentive for employers to offer enhanced services for depression outside the public health care system or their current agreements with insurers and EAPs.

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Disclosures

No potential conflicts of interest relevant to this article were reported.

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