

# Occupational Stress: Counts and Rates

TIMOTHY WEBSTER  
BRUCE BERGMAN

Although many employees experience stress as a normal part of their jobs, some employees experience stress more severely than others, to an extent that they become ill and need time away from work. The Bureau of Labor Statistics (BLS) classifies such occurrences of occupational stress as “neurotic reaction to stress.”<sup>1</sup> The Bureau’s Survey of Occupational Injuries and Illnesses (SOII) estimated that there were 3,418 cases of occupational stress in 1997. The median absence from work for these cases was 23 days, more than four times the median absence for all nonfatal occupational injuries and illnesses. Forty-four percent of occupational stress cases involved 31 or more lost workdays, compared to 19 percent of all injuries and illnesses. (See table 1.)

## Counts

The 1997 estimate of 3,418 cases of occupational stress is the lowest since 1992, when BLS first collected data on detailed case characteristics of nonfatal occupational injuries and illnesses. This decline is consistent with the trend for all nonfatal occupational injuries and illnesses involving days away from work. (See table 2.) The number of occupational stress cases declined 15 percent during the period 1992-97 and the number of all injury and illness cases declined 21 percent.

Timothy Webster and Bruce Bergman are economists in the Office of Safety, Health and Working Conditions, Bureau of Labor Statistics. A version of these findings was presented in March 1999 at the American Psychological Association and National Institute of Occupational Safety and Health joint conference, “Work, Stress, and Health ’99: Organization of Work in a Global Economy.”  
Telephone: (202) 691-6169  
E-mail: Webster\_T@bls.gov  
Bergman\_B@bls.gov

Although many employees experience stress as a normal part of their jobs, some experience stress so severely that they become ill and need time away from work to recuperate.

TABLE 1. Percent distribution of all nonfatal occupational injuries and illnesses and neurotic reaction to stress cases involving days away from work, 1997

Days away from work <sup>1</sup>	All injuries and illnesses	Neurotic reaction to stress
Total .....	100	100
Days away from work		
1 .....	17	6
2 .....	13	2
3-5 .....	20	15
6-10 .....	13	9
11-20 .....	12	11
21-30 .....	7	12
31 or more .....	19	44
Median days away from work .....	5	23

<sup>1</sup> Days-away-from-work cases include those which result in days away from work with or without restricted work activity.

**Industry.** Table 3 shows how the industrial distribution of occupational stress cases differed from the distribution of all injury and illness cases. Finance, insurance, and real estate, with 2 percent of all injuries and illnesses, and services, with 23 percent, had high percentages of occupational stress cases, 12 percent and 35 percent, respectively. All other industries had lower percentages of occupational stress cases than they did of all injuries and illnesses. The three industries with the highest percentage of occupational stress cases in 1997 were: Services (35 percent), manufacturing (21 percent), and retail trade (14 percent).

**Occupation.** The distribution of occupational stress cases by occupation differed from the distribution of all injury and

TABLE 2. Number of all nonfatal occupational injuries and illnesses and neurotic reaction to stress cases involving days away from work and the percent change in the number of cases, 1992-97

Nature of injury or illness	1992	1993	1994	1995	1996	1997	Percent change 1992-97
All injuries and illnesses .....	2,331,098	2,252,591	2,236,639	2,040,929	1,880,525	1,833,380	-21
Neurotic reaction to stress .....	4,011	5,660	4,974	3,988	3,453	3,418	-15

TABLE 3. Percent distribution of all nonfatal occupational injuries and illnesses and neurotic reaction to stress cases involving days away from work, selected characteristics, 1997

Characteristic	All injuries and illnesses	Neurotic reaction to stress
Total cases <sup>1</sup> .....	1,833,380	3,418
Industry (total percent) .....	100	100
Agriculture, forestry, and fishing <sup>1</sup> .....	2	-
Mining <sup>2</sup> .....	1	-
Construction .....	10	-
Manufacturing .....	24	21
Transportation and public utilities <sup>2</sup> .....	12	9
Wholesale trade .....	8	7
Retail trade .....	17	14
Finance, insurance, and real estate .....	2	12
Services .....	23	35
Occupation (total percent) .....	100	100
White collar		
Managerial and professional .....	5	16
Technical, sales, and administrative support .....	15	48
Bookkeepers, accounting and auditing clerks .....	( <sup>3</sup> )	5
Supervisors and proprietors, sales occupations .....	2	4
Investigators and adjusters, excluding insurance .....	( <sup>3</sup> )	4
Sales representatives, mining, manufacturing, wholesale .....	( <sup>3</sup> )	3
Insurance adjusters, examiners and investigators .....	( <sup>3</sup> )	3
General office clerks .....	1	3
Service .....	17	11
Cooks .....	2	4
Guards and police, except public .....	1	3
Blue collar		
Farming, forestry, and fishing .....	3	-
Precision production, craft, and repair .....	17	9
Operators, fabricators, and laborers .....	42	15
Supervisors, production occupations .....	1	4
Assemblers .....	2	3
Sex (total percent) .....	100	100
Men .....	66	39
Women .....	33	61

<sup>1</sup> Excludes farms with fewer than 11 employees.

<sup>2</sup> Data conforming to Occupational Safety and Health Administration definitions for mining operators in coal, metal, and nonmetal mining and for employees in railroad transportation are provided to BLS by the Mine Safety and Health Administration and the Federal Railroad Administration, U.S. Department of Transportation. Independent mining contractors are excluded from the coal, metal, and mining industries.

<sup>3</sup> Less than 1 percent.

NOTE: Overall categories may include data for classifications not shown. Dash indicates data that do not meet publication guidelines. Because of rounding, sums of individual items may not equal totals.

illness cases by occupation. Whereas 42 percent of all injuries and illnesses occurred to operators, fabricators, and laborers, 15 percent of occupational stress cases occurred within this group. Conversely, although 15 percent of all injuries and illnesses involved technical, sales, and administrative support occupations, 48 percent of occupational stress cases involved this occupational group.

Individual occupations with the highest percentages of occupational stress cases included: Bookkeepers, accounting and auditing clerks—5 percent; supervisors and proprietors, sales occupations—4 percent; investigators and adjusters, excluding insurance—4 percent; cooks—4 percent; and supervisors, production occupations—4 percent. (See table 3.)

**Sex.** For all injury and illness cases, for every case involving a female, approximately two cases involved a male. The opposite pattern was true for occupational stress—for every 1.6 cases involving a female, 1 case involved a male.

## Rates

**Incidence rates by industry.** Table 4 shows that 1997 was the first year since BLS started collecting data on detailed case characteristics that the nonfatal occupational injury and illness incidence rate for occupational stress cases was less than 1 case per 10,000 full-time workers in each of the major industry divisions. The 1997 incidence rate for occupational stress in finance, insurance, and real estate, 0.6, was at its lowest point in 6 years, and for the first time since 1992, did not significantly exceed the rate for each of the other major industry divisions. The incidence rate for all injuries and illnesses in finance, insurance, and real estate, 67.4 cases per 10,000 workers in 1997, was the lowest among the major industry divisions, and less than one-third of the total private industry rate.

**Relative risk by occupation.** An index of relative risk compares the risk faced by employees in individual occupational groups to that faced by all occupations combined. The index is calculated such that the risk faced by all occupations combined is equal to 1. In 1997, the index for occupational stress ranged from 0.6 for managerial and professional occupations to 1.6 for technical, sales, and administrative support occupations. (See table 5.)

The relative risk for occupational stress exceeded the relative risk for all injuries and illnesses for white-collar occupations; conversely, the relative risk for occupational stress was lower than the relative risk for all injuries and illnesses for blue-collar occupations and service occupations.

## Summary

BLS estimated that there were 3,418 work absences due to occupational stress in 1997. These cases tended to be severe, resulting in a median of 23 days away from work to recuperate. Occupational stress cases had characteristics that differed from the characteristics of all nonfatal occupational injuries and illnesses combined. Major differences included the following:

- Finance, insurance, and real estate and services had a higher percentage of occupational stress cases than their percentage share of all injuries and illnesses; the opposite was true for all other industry divisions.
- The relative risk of job stress for white-collar workers was higher than their relative risk for all injuries and illnesses; the opposite was true for blue-collar and service workers.
- For all injuries and illnesses, for every case involving a female, approximately two cases involved a male; however, for occupational stress, for every 1.6 cases involving a female, 1 case involved a male.

Although these occupational stress cases are relatively

infrequent, they are often severe; and, therefore, decreasing the risk of occupational stress benefits both workers and employers.

## Survey methodology

The BLS Survey of Occupational Injuries and Illnesses is a Federal/State cooperative program. Each year, a scientifically selected sample of private employers responds to a survey questionnaire.<sup>2</sup> Respondents report summary information on the number of injuries and illnesses directly from establishment safety logs. The information contained in these logs conforms to definitions and recordkeeping guidelines established by the Occupational Safety and Health Administration, U.S. Department of Labor. In addition to the number of cases, the questionnaire asks for the number of employee hours worked (used to calculate incidence rates) and the establishment's average employment.<sup>3</sup>

BLS classifies nonfatal injuries and illnesses resulting in work absences by principal physical characteristic (for example, fracture, cut, or respiratory disease), part of the body directly affected (for example, back or leg), source (for example, box, beam, or worker motion), and event or exposure (for example, fall or struck by object). In addition, BLS gathers data on the worker's age, length of service, race, occupation, and gender.■

TABLE 4. Incidence rates<sup>1</sup> for all nonfatal occupational injuries and illnesses and neurotic reaction to stress cases involving days away from work<sup>2</sup> per 10,000 full-time workers by industry, 1992-97

Industry	All injuries and illnesses <sup>1997</sup>	Neurotic reaction to stress					
		1992	1993	1994	1995	1996	1997
Total private industry <sup>3</sup> .....	212.3	0.5	0.7	0.6	0.5	0.4	0.4
Agriculture, forestry, and fishing <sup>3</sup> .....	300.5	.1	.1	-	-	-	-
Mining <sup>4</sup> .....	292.7	.1	-	-	-	-	-
Construction.....	364.8	.1	.1	.1	-	-	-
Manufacturing.....	238.3	.4	.4	.5	.4	.3	.4
Transportation and public utilities <sup>4,5</sup> .....	365.4	.5	1.0	.8	.7	.4	.5
Wholesale trade.....	214.3	.5	.4	1.0	.3	.1	.4
Retail trade.....	193.0	.3	.3	.5	.7	.6	.3
Finance, insurance, and real estate.....	67.4	1.5	2.6	1.9	1.2	1.1	.6
Services.....	166.9	.6	.9	.5	.4	.4	.5

<sup>1</sup> Incidence rates represent the number of injuries and illnesses per 10,000 full-time workers and were calculated as:

$(N / EH) \times 20,000,000$  where:

N = number of injuries and illnesses

EH = total hours worked by all employees during the calendar year

20,000,00 = base for 10,000 full-time equivalent workers (working 40 hours per week, 50 weeks per year)

<sup>2</sup> Days-away-from-work cases include those that result in days away from work with or without restricted work activity.

<sup>3</sup> Excludes farms with fewer than 11 employees.

<sup>4</sup> Data conforming to Occupational Safety and Health Administration definitions for mining operators in coal, metal, and nonmetal mining and for employees in railroad transportation are provided to

BLS by the Mine Safety and Health Administration, U.S. Department of Labor, and the Federal Railroad Administration, U.S. Department of Transportation. Independent mining contractors are excluded from the coal, metal, and nonmetal mining industries.

<sup>5</sup> In 1996, air courier operations previously classified in the Standard Industrial Classification System (SIC) as industry groups 421, 422, 423, 452, 473, and 478 were reclassified to industry group 451. As a result, the 1996 and 1997 estimates for these SIC's and major industry groups 42, 45, and 47 are not comparable to those for prior years. In addition, the 1996 and 1997 estimates for transportation and public utilities may have more variability than those for prior years.

NOTE: Dash indicates data do not meet publication guidelines.

TABLE 5. Relative risk<sup>1</sup> of all nonfatal occupational injuries and illnesses and neurotic reaction to stress cases involving days away from work by occupation, 1997

Occupation	Number employed <sup>2</sup> (thousands)	All injuries and illnesses	Neurotic reaction to stress
All occupations .....	129,558	1.0	1.0
White collar			
Managerial and professional .....	37,686	.2	.6
Technical, sales, and administrative support .....	38,309	.5	1.6
Service .....	17,537	1.3	.8
Blue collar			
Farming, forestry, and fishing .....	3,503	1.0	-
Precision production, craft, and repair .....	14,124	1.6	.8
Operators, fabricators, and laborers .....	18,399	3.0	1.1

<sup>1</sup> The index of relative risk for workers of type *i* is calculated as the ratio of group *i*'s proportion of all injuries and illnesses to group *i*'s proportion of total employment:  $I_i = (n_i / N) / (h_i / H)$  where:

$I_i$  = Index of relative risk for group *i*  
 $n_i$  = Injuries and illnesses sustained by group *i*

$N$  = Injuries and illnesses sustained by all workers

$h_i$  = Employment of group *i*

$H$  = Employment of all workers

<sup>2</sup> Employment statistics are based on Current Population Survey data, 1997.

<sup>1</sup> Throughout this article, "neurotic reaction to stress" and "occupational stress" are used synonymously.

<sup>2</sup> Occupational injury and illness data for coal, metal, and nonmetal mining and for railroad activities are provided by the Department of Labor's Mine Safety and Health Administration and the Department of Transportation's Federal Railroad Administration. The survey excludes all work-related fatalities as well as nonfatal work injuries and illnesses to the self employed, to workers on farms with 10 or fewer employees, and to private household workers; for national estimates, the survey excludes

Federal, State, and local government workers.

<sup>3</sup> Many factors can influence counts and rates of injuries and illnesses in a given year. These include not only the year's injury and illness experience, but also the employer's understanding of which cases are work-related under current recordkeeping guidelines of the U.S. Department of Labor. The number of injuries and illnesses reported in a given year also can be affected by changes in the level of economic activity, working conditions and work practices, worker experience and training, and the number of hours worked.