Work Injuries and Illnesses Occurring to Women

Women's job related injuries and fatalities are substantially below those of men, largely because of their lower proportions in high-risk industries and occupations. As more and more women take high-risk jobs, however, the possibility exists that their risk of injury and death will increase.

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Studies from occupational safety and health professionals show that women incur far fewer work injuries than men. In fact, Bureau of Labor Statistics data for the period 1992-96 reveal that although they comprise slightly under half of the total workforce, women incurred less than one-tenth of job-related fatal injuries and one-third of the nonfatal injuries and illnesses that required time off to recuperate.[1]

One explanation for this large discrepancy is that more women than men are employed in relatively less dangerous jobs, such as teaching and service occupations, where work is performed indoors in controlled environments. There were virtually no women employed in the most dangerous occupations in the construction trades, such as roofing and structural metal work, or in other high-risk jobs where work is performed outdoors.[2] Women today incur far fewer job-related fatalities and serious injuries than men in part because of their low proportionate share of employment in high risk industries. But if more women enter high-risk occupations, like those in construction and mining, their risk of injury or death may increase.

This article profiles job-related fatalities, injuries, and illnesses that occurred to women from 1992-96 and compares them with those occurring to men during the same time period.

Fatal injuries

Slightly over 2,500 women were fatally injured at work during 1992-96—about 8 percent of the 32,000 job-related fatalities that occurred during that period. Homicides and highway incidents accounted for nearly two-thirds of the work injury deaths among women. (See table 1.)

Homicides. About 40 percent of the women and 14 percent of the men who were fatally injured were victims of homicide. Yet, men incurred over four times as many job-related homicides as women. Regardless of gender, most homicide victims were shot; but women were strangled or beaten to death relatively more often than men. Two-thirds of homicides occurred in the retail and service industries.

Nearly one-half of the women fatally assaulted worked in retail establishments, such as grocery stores, eating and drinking places, and gasoline service stations. (See table 2.) Yet,

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Table 1. Job-related fatalities by event or exposure, 1992-96

Event or exposure	Women		Men	
	Number	Percent	Number	Percent
Total	2,506	100	29,061	100
Homicides	973	39	4,173	14
Highway crashes	650	26	5,764	20
Struck by vehicle	156	6	1,683	6
Falls	137	5	3,081	11
Aircraft crashes	128	5	1,536	5
Contact with objects	125	5	4,862	17
Harmful exposures	102	4	2,868	10
Other	235	9	5,094	18

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 1992-96

Table 2. Job-related homicides by industry, 1992-96

Industry	Women		Men	
	Number	Percent	Number	Percent
Total	973	100	4,173	100
Retail trade	471	48	1,938	46
Grocery stores	136	14	695	17
Eating places	110	11	268	6
Drinking places	36	4	148	4
Gasoline service stations	28	3	166	4
Services	208	21	622	15
Hotels and motels	22	2	50	1
Beauty shops	20	2	10	([1])
Health services	37	4	26	1
Finance, insurance, and real estate	72	7	124	3
Depository institutions	29	3	22	1
Real estate	28	3	78	2
Other businesses	98	10	969	23
Government	124	13	520	12

[1] Less than 0.5 percent.
SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 1992-96

men incurred a disproportionate share of the murders in these establishments. They accounted for about 50 percent of the workforce but comprised 80 percent of the homicide victims. This large discrepancy may be because one-half of these fatal assaults occurred at night, between 8 p.m. and 4 a.m., when men primarily staff these businesses.[3]

About one-third of the women who were murdered on the job worked in sales occupations either as a cashier, sales supervisor, proprietor, or clerk. All female managers of food serving and lodging establishments who were fatally injured were homicide victims.

Robbery was the primary motive for fatal assaults in retail industries. The availability of ready cash and the accessibility of the establishments made them attractive targets round-the-clock.[4]

Although most of the female victims of job-related homicides did not know their attackers, more than one-fourth were fatally assaulted by people they did know—co-workers, clients, spouses, or friends. (See table 3.) About 16 percent were victims of domestic disputes that spilled over into the workplace. Less than 1 percent of homicides to male victims resulted from domestic disputes.

Highway vehicle crashes. Job-related highway incidents claimed the lives of 650 women during 1992-96. Health care and social service workers accounted for almost one-fifth of these deaths—about the same number as motor vehicle operators, such as truck and bus drivers and driver-sales workers. About one-fifth of the women who died in highway vehicle crashes worked for a government agency. Highway vehicle crashes accounted for a slightly higher proportion of job-related deaths among women than among men.

Other incidents resulting in fatalities. About 15 percent of the fatal injuries to women resulted from other transportation-related incidents, such as aircraft crashes or being struck by a vehicle. Women killed in aircraft crashes included airline attendants and managers and professionals traveling to meetings or conferences. Women working on highway construction projects, female crossing guards, and women crossing streets accounted for most of the women who died after being struck by a vehicle. Highway and other vehicle-related incidents were the leading fatal event for female police officers and guards, while homicide was the leading event for men in these occupations.

Falls accounted for 5 percent of the job-related fatalities among women, compared with 11 percent for men. Over half the fatal falls occurring to women took place on stairs, steps, or other walking surfaces; whereas, fatal falls to male workers were primarily from roofs, ladders, scaffolds, vehicles, or building girders.

Another 5 percent of female workers' fatalities resulted from contact with objects and equipment, such as being crushed in running machinery or struck by a falling object. Exposure to harmful substances or environments, such as electrocutions, drown-

Table 3. Job-related homicides by circumstances or alleged perpetrator, 1992-96

Circumstances or alleged perpetrator	Women		Men	
	Number	Percent	Number	Percent
Total	973	100	4,173	100
Robberies and other crimes	709	73	3,697	89
Work associates	99	10	423	10
Coworker, former coworker	62	6	274	7
Customer, client	37	4	149	4
Relatives	106	11	28	([1])
Spouse, ex-spouse	91	9	3	([1])
Other relative	15	2	16	([1])
Other personal acquaintances	59	6	25	([1])
Boy(or girl)friend, ex-boy(or girl)friend	50	5	7	([1])
Other acquaintances	9	1	18	([1])

[1] Less than 0.5 percent.
SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 1992-96

ings, and the inhalation of chemicals, accounted for 4 percent of the fatalities among women workers. Two percent of the women killed at work were victims of fire and explosions.

Comparing occupational fatality rates. Besides incurring fewer fatal work injuries than men, women have much lower fatality rates than male workers.[5] Female workers had a work fatality rate of less than 1 fatal injury per 100,000 employed women in 1996, compared with 8 fatal work injuries per 100,000 employed men for the same period of time. Table 4 compares fatality rates for women and men in the 20 occupations with the largest number of female fatalities. The highest rates for female workers were generally 2 or 3 times less than the rates for men in the same occupations. Table 5 shows the leading causes of fatalities for both men and women in these occupations.

Nonfatal injuries and illnesses resulting in days away from work

Female wage and salary workers in the private sector incurred slightly over 650,000 injuries and illnesses in 1995, or one-third of the more than 2 million cases resulting in days away from work to recuperate.

Sprains and strains accounted for a little over two-fifths of the injury and illness cases for both men and women. (See table 6.)

Although male workers incurred greater numbers of most types of injuries and illnesses, women accounted for more cases of carpal tunnel syndrome, tendonitis, respiratory system diseases, infectious and parasitic diseases, and disorders resulting from anxiety or stress. Their predominance in certain health care occupations may explain part of their increased risk of suffering infectious and parasitic diseases.

Almost half of the female workers' injuries and illnesses resulted from bodily reaction or exertion, such as overexertion in lifting or pushing and repetitive grasping of handtools. (See table 7.) Falls, primarily on the same level, and contact with objects (such as being struck by falling objects, striking against objects, or getting caught in running equipment) each accounted for about one-fifth of the job-related injuries among women.

Compared with men, women incurred more job-related injuries from repetitive motion, assaults, inhalation of harmful substances, and aircraft crashes.

Women accounted for about two-thirds of the nearly 23,000 injuries reported from workplace assaults. The manner in which women were assaulted varied. Reported cases include both physical and verbal incidents resulting in days away from work to recuperate. (See table 8.) About 70 percent of all nonfatal assaults that resulted in days away from work occurred in service industries such as nursing homes, social services, and hospitals. These injuries resulted primarily from assaults by patients. Another 20 percent of the cases occurred in retail industries, primarily eating and drinking establishments and grocery stores—the most vulnerable workers being female stock handlers who incurred about one-fourth of these assaults.

Occupations with large numbers of nonfatal injuries and illnesses. A comparison of risk between men and women by occupation shows that women had a higher chance of injury in 15 of the 20 occupations for which women reported the largest number of nonfatal injuries. (See table 9.) For example, women working as registered nurses had a 1 in 49 chance of injury compared to male registered nurses, who had a 1 in 75 chance of injury. Women also had a higher chance of incurring a nonfatal injury or illness in 12 of the top 20 occupations for which men had the highest number of job-related injuries or illnesses.

Conclusion

Women have far fewer fatal work injuries than men; and, although they also have fewer nonfatal injuries, they do have a higher chance of certain job-related injuries, such as those resulting from repetitive motion or assaults. Women in certain occupations also had a higher risk of nonfatal injury or illness than their male counterparts.

More time and data however, are needed to ascertain if serious injuries incurred by women will increase relative to their increase in employment in high-risk occupations. Further studies are needed to evaluate comparative severity (median days away from work) of job-related injuries and illnesses between women and men. This information could be valuable for re-engineering work environments to reduce the number and severity of injuries in the future.

—ENDNOTES—

[1] Data on fatal work injuries are from the Bureau of Labor Statistics' Census of Fatal Occupational Injuries (CFOI), 1992-96. This program, which has collected occupational fatality data nationwide since 1992, uses diverse data sources to identify, verify, and profile fatal work injuries. Information about each workplace fatality (occupation and other worker characteristics, equipment being used, and circumstances of the event) is obtained by cross-referencing source documents, such as death certificates, workers' compensation records, and reports to Federal and State agencies. This method assures counts are as complete and accurate as possible.

Data on nonfatal injuries and illnesses are from the Survey of Occupational Injuries and Illnesses (SOII), 1995. This program collects information from a random sample of about 200,000 establishments representing most private industry wage and salary workers. Worker characteristics are collected only for those workers sustaining injuries and illnesses that require days away from work to recuperate. Because the scope and methodology of CFOI and SOII are slightly different, comparison of fatal and nonfatal data are problematic. For additional information, access the Bureau's Internet site at **http://stats.bls.gov/oshhome.htm** or e-mail the Census of Fatal Occupational Injuries staff at **cfoistaff@bls.gov**

Employment data are from the BLS Current Population Survey (CPS). See *Employment and Earnings*, Volume 44, No. 1, January 1997 for an explanation of the scope and data collection methods of the CPS.

[2] See "Outdoor Occupations Exhibit High Rates of Fatal Injuries," Bureau of Labor Statistics, Summary 95-6, March 1995.

[3] "Workers on Flexible and Shift Schedules in 1997," USDL 98-119, Bureau of Labor Statistics, March 26, 1998.

[4] See Rosemary J. Erickson, *Armed Robbers and their Crimes*, Athena Research Corporation, Seattle, WA, 1996.

[5] See the Technical note in "State and Industry Fatal Occupational Injuries, 1992-96" in this issue for an explanation of how fatality rates are calculated.

Table 4. Fatal occupational injuries by occupation and gender for the 20 jobs with the highest number of fatalities among women, 1996

Occupation	Fatalities		Employment[1] (in thousands)		Fatalities per 100,000 workers[2]	
	Women	Men	Women	Men	Women	Men
Sales supervisors and proprietors	29	196	1,688	2,813	1.7	7.0
Public transportation attendants	26	12	77	18	33.8	66.7
Cashiers	24	70	2,231	625	1.1	11.0
Nursing aides, orderlies, attendants	18	5	1,635	215	1.1	2.3
Managers, food serving and lodging places	17	58	635	748	2.7	7.8
Truck drivers	16	769	160	2,859	10.0	26.9
Registered nurses	15	([3])	1,853	133	.8	([3])
Farm operators and managers	11	365	304	1,010	3.6	36.1
Laborers, except construction	10	203	269	1,065	3.7	19.0
Secretaries	10	([3])	3,120	44	.3	([3])
Social workers	10	9	510	235	2.0	3.8
Farm workers	9	159	158	682	3.2	21.0
Teachers, except post-secondary	9	15	3,515	1,209	.3	1.2
Construction laborers	8	283	31	778	25.8	36.1
Sales counter clerks	8	6	134	65	5.2	9.2
Guards	7	87	200	611	3.5	14.2
Waiters and waitresses	7	4	1,071	304	.7	1.3
Accountants and auditors	6	7	861	677	.7	1.0
Police and detectives	6	105	152	808	3.9	13.0
Therapists	6	3	347	127	1.7	2.4

[1] The employment figures are annual average estimates of employed civilians, age 16 and older, from the Current Population Survey, 1996.

[2] The rate represents the number of fatal occupational injuries per 100,000 workers and was calculated as follows:

(N/W) x 100,000, where

N = the number of fatally injured workers, age 16 and older, and
W = the number of employed workers, age 16 and older.

[3] Data do not meet BLS publication criteria.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 1996

Table 5. Leading fatal events by occupation and gender for the 20 jobs with the highest number of fatalities among women, 1996

Occupation	Leading fatal events (percent)	
	Women	Men
Sales supervisors and proprietors	Homicides (72)	Homicides (64)
Public transportation attendants	Aircraft crashes (100)	Aircraft crashes (75)
Cashiers	Homicides (92)	Homicides (90)
Nursing aides, orderlies, attendants	Highway (56), homicides (22)	Assaults and violent acts (60)
Managers, food serving and lodging places	Homicides (100)	Homicides (76)
Truck drivers	Highway incidents (75)	Highway incidents (65)
Registered nurses	Highway incidents (47)	(No data.)
Farm operators and managers	Transportation incidents (64)	Struck by object (29); overturned vehicle (25)
Laborers, except construction	Contact with object (30); transportation incident (30)	Transportation incident (30); struck by object (30);
Secretaries	Homicides (30); highway (30)	(No data.)
Social workers	Highway incidents (60); homicides (30)	Homicides (67)
Farm workers	Assaults by animals (44)	Contact with object (22); nonhighway incidents (22)
Teachers, except post-secondary	Homicides (33); highway incidents (33)	Aircraft crashes (40); falls (27)
Construction laborers	Transportation (75)	Contact with object (30); transportation (29)
Sales counter clerks	Homicides (88)	Homicides (67)
Guards	Worker struck by vehicle (43)	Homicides (56);
Waiters and waitresses	Homicides (100)	Assaults and violent acts (75)
Accountants and auditors	Highway incidents (67)	Homicides (43)
Police and detectives	Highway incidents (50)	Homicides (50); highway incidents (32)
Therapists	Highway incidents (67)	(Less than 3 fatalities.)

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 1996

Table 6. Selected nature of injury or illness, cases resulting in days away from work, private wage and salary workers, 1995

Nature of injury or illness	Women		Men		Median days away from work
	Number	Percent	Number	Percent	
Total	667,166	100	1,355,098	100	5
Sprains and strains	302,435	45	566,519	42	5
Surface wounds, bruises	78,549	12	171,391	13	3
Open wounds	38,540	6	158,793	12	3
Fractures	30,704	5	92,799	7	18
Carpal tunnel syndrome	22,286	3	20,149	1	30
Burns	15,747	2	36,469	3	4
Tendonitis	12,819	2	9,123	1	12
Symptoms and ill-defined conditions	10,285	2	11,286	1	3
Loss of consciousness	1,091	([1])	500	([1])	2
Other musculoskeletal disorders	9,386	1	11,026	1	([1])
Skin disorders	4,247	1	5,744	([1])	3
Anxiety, stress, neurotic disorders	4,173	1	1,689	([1])	23
Respiratory system diseases	2,079	([1])	1,500	([1])	5
Infectious and parasitic diseases	1,964	([1])	786	([1])	5

[1] Less than 0.5 percent.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 1992-96

Table 7. Selected event or exposure cases resulting in days away from work, private wage and salary workers, 1995

Event or exposure	Women		Men		Median days away from work
	Number	Percent	Number	Percent	
Total	667,166	100	1,355,098	100	5
Bodily reaction and exertion	320,535	48	557,081	41	7
Overexertion in lifting	112,873	17	220,140	16	6
Repetitive motion	51,091	8	30,983	2	18
Falls	134,769	20	206,968	15	7
Contact with objects and equipment	127,453	19	430,740	32	4
Exposure to harmful substances or environments	36,972	6	65,862	5	3
Due to inhalation	6,183	1	5,929	([1])	2
Assaults and violent acts	18,156	3	10,619	1	4
By persons	15,440	2	7,286	([1])	5
Transportation incidents	16,940	3	56,016	4	8
Highway	12,313	2	32,938	2	8
Aircraft	386	([1])	98	([1])	8

[1] Less than 0.5 percent.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 1992-96

Table 8. Workplace assault cases resulting in days away from work, private wage and salary workers, 1995

Type of assault	Women	Men	Median days away from work
Total	15,440	7,286	5
Hitting, kicking, and beating	6,255	3,238	4
Squeezing, pinching, and scratching	1,927	264	3
Biting	720	237	2
Threats or verbal abuse	133	168	5
Rape	66	([1])	41
Stabbing	31	136	8
Shooting	([1])	188	46
Assaults, other[2]	4,782	1,797	7
Assaults, unspecified	1,502	1,258	9

[1] Data do not meet BLS publication criteria.

[2] Other assaults account for slightly over one-fourth of the total. These incidents may include being poked in the eye, being pushed, something being thrown at the victim, stress from being robbed, etc.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Survey of Occupational Injuries and Illnesses, 1995

Table 9. The 20 jobs with the highest number of nonfatal injuries and illnesses requiring time off work by gender, private wage and salary workers, 1995

Occupation	Number of nonfatal injuries and illnesses		Employment[1] (in thousands)		Chance of nonfatal injury/illness	
	Women	Men	Women	Men	Women[2]	Men
Women						
Nursing aides, orderlies, attendants	89,687	10,204	1,069	133	*1:12	1:13
Registered nurses	26,077	1,625	1,275	122	*1:49	1:75
Cashiers	24,892	5,138	891	269	*1:36	1:52
Assemblers	20,120	35,167	435	708	1:22	1:20
Maids and housemen	19,396	6,538	324	85	1:17	1:13
Miscellaneous food preparation jobs	16,813	17,179	98	149	*1:6	1:9
Cooks	16,601	18,615	459	733	*1:28	1:39
Laborers, except construction	16,535	97,721	201	923	1:12	1:9
Janitors and cleaners	14,966	37,258	345	993	*1:23	1:27
Waiters and waitresses	13,705	3,697	418	169	*1:30	1:46
Sales supervisors and proprietors	13,304	12,339	1,191	1,763	*1:90	1:143
Kitchen workers, food preparing	13,138	4,285	75	39	*1:6	1:9
Licensed practical nurses	12,771	457	266	14	*1:21	1:31
Stock handlers and baggers	11,150	23,413	144	357	*1:13	1:15
Textile sewing machine operators	9,804	1,522	458	78	*1:47	1:51
Truckdrivers	9,657	141,101	62	2,201	*1:6	1:16
Health aides, except nursing	9,268	2,163	179	59	*1:19	1:27
Secretaries	7,644	197	2,538	28	1:332	1:142
Hand packers and packagers	6,240	4,867	136	98	1:22	1:20
Public transportation attendants	6,212	1,063	44	12	*1:7	1:11
Men						
Truckdrivers	9,657	141,101	62	2,201	*1:6	1:16
Laborers, except construction	16,535	97,721	201	923	1:12	1:9
Construction laborers	786	42,257	15	662	1:19	1:16
Janitors and cleaners	14,966	37,258	345	993	*1:23	1:27
Assemblers	20,120	35,167	435	708	1:22	1:20
Carpenters	385	34,435	6	823	*1:16	1:24
Welders and cutters	1,395	28,381	26	531	1:19	1:19
Stock handlers and baggers	11,150	23,413	144	357	*1:13	1:15
Groundskeepers, gardeners, except farm	982	20,394	21	497	*1:21	1:24
Automobile mechanics	146	19,480	3	616	*1:21	1:32
Shipping and receiving clerks	4,534	19,208	172	415	1:38	1:22
Electricians	293	17,719	12	596	1:41	1:34
Miscellaneous food preparation jobs	16,813	17,179	98	149	*1:6	1:9
Drivers-sales workers	1,555	15,993	5	130	*1:3	1:8
Plumbers, pipefitters, and steamfitters	250	15,221	6	393	*1:24	1:26
Bus, truck, and stationary engine mechanics	133	14,012	1	280	*1:8	1:20
Industrial truck operators	1,081	13,989	35	451	1:32	1:32
Farm workers	2,275	13,743	78	507	*1:34	1:37
Industrial machinery repairers	661	13,662	17	519	*1:26	1:38
Machinists	368	11,107	33	448	1:90	1:40

[1] The employment figures are annual average estimates of employed civilians, age 16 and older, from the Current Population Survey, 1995.

[2] An asterisk (*) indicates that women have a greater chance than men of incurring an injury: Chance = employment / nonfatal cases.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Survey of Occupational Injuries and Illnesses, 1995