



Information sheet: 2/02/EMSU
(Last updated May 2002)

OCCUPATIONAL ILL HEALTH AGE
STATISTICS: INFORMATION SHEET

EXECUTIVE SUMMARY

Data from four sources have been examined to assess whether there are differences in the occurrence of work-related illness between younger and older workers (or ex workers). The sources used were the Self-reported Work-related Illness surveys of 1995 (SWI95) and 1998/99 (SWI98/99); surveillance reports for the three years 1998-2000 from the Occupational Disease Intelligence Network (ODIN); and the Self-reported Work-related Conditions Survey of 1995 (SWC). In this analysis 'younger' means age 16-44, and 'older' age 45-64 (for the SWI data: 45-59 for women).

The conclusions of this analysis are as follows:

- Rates of work-related illness are generally higher in older (age 45+) people of working age.
- The difference is less marked (but still present) if sufferers among the economically inactive are excluded.
- We believe these higher rates are explained by the automatic tendency for the prevalence rates for persistent conditions to be greater for older people of working age, and the fact that the prevalence of conditions due to cumulative exposure to hazards will also tend to increase with age.
- This explanation is supported by the observations that:
 - rates for work-related skin disease and for Post Traumatic Stress Disorder do not vary by age; and
 - self-reported exposure to workplace risk factors shows very little variation by age.

There is most evidence of a statistically significant increase when considering the SWI95 data; all but one of the main complaints shows a significant increase in ill health with age. There is similar evidence of a statistically significant increase when considering values in SWI98/99. The ODIN information also suggests an increase in the rate of ill health (as indicated by the ratio of rates between older and younger workers). Contrary to SWI95 and SWI98/99, there are few occurrences of statistically significant differences by age in the SWC information.

COMMENTARY

Details of each data source are included towards the end of this document in 'Information on data sources'

Stress, depression & anxiety:

Taking into account the figures in all four tables, there is evidence that the rate of stress, depression and anxiety in the older age group is higher than in the younger group.

It is evident from *Table 1* (SWI95), that the prevalence rate in the older age group is greater than the rate in the younger group for males, females and all persons; these are all statistically significant increases. Values in *Table 2* (SWI98/99) show differences in the same direction. For females and all persons, there are increases that are statistically significant; for males, the difference is not statistically significant. In *Table 3* (ODIN), the incidence data portray a similar situation, although it is not possible to determine whether these differences are statistically significant (-see 'Information on data sources' below.) In contrast, working conditions associated with stress, depression or anxiety in *Table 4* (SWC) (the first four descriptions in the table) generally show no discernable differences between old and young workers for any of the working conditions; the exception being that there is a significant decrease between females in the younger and older groups for the working condition 'Getting insufficient help and support from people in charge when needed'.

Musculoskeletal disorders

Overall, there is evidence of an increase in musculoskeletal disorders in the older working age group compared to the younger. *Table 1* (SWI95) shows not only statistically significant increases in prevalence rates for all musculoskeletal disorders, but also for each of the three sites affected, for males, females and all persons. Likewise, it can be seen in *Table 2* (SWI98/99) that there is a significant increase for males, females and all persons. It is evident in *Table 3* (ODIN) that although there is generally an increase in the incidence rate when comparing older workers to younger workers, these increases are more modest than those in *Table 1* and *Table 2*. In *Table 4* (SWC), the working conditions relating to musculoskeletal disorders are the final five in the list. Most of the differences between younger and older workers are not significant, although there is a significant increase for males and all persons for 'Twisting or stooping when lifting or moving heavy loads'. Conversely, there are significant decreases in the rate of older workers compared to younger workers for males and all persons in 'Using appreciable force' and 'Lifting or moving heavy loads'.

Lower respiratory diseases

There is some evidence of an increase in lower respiratory illness rates between the two age groups. Data in *Table 1* (SWI95) exhibit significant increases in prevalence rates between older workers and younger workers in all categories for this complaint. Nevertheless, some of the rates for males and females are based on less than 30 sample cases. For the incidence data in *Table 3* (ODIN), there is an increase in the asthma rate of approximately 1.5 for males, females and all persons. In *Table 4* (SWC), the working condition most closely associated with lower respiratory disease is 'workers ever exposed to breathing fumes, dusts and other harmful substances in their job'. It can be seen here that there are no discernable changes in the rates between younger and older workers.

Skin disease

There is very little evidence to suggest a change in rates of skin disease. There are no statistically significant differences between the rates for any of the data sources, although there is generally a reduction in the rate of older female workers compared with younger female workers in *Table 1* (SWI95) and *Table 3* (ODIN). All values for skin disease in *Table 1* (SWI95) are based on less than 30 sample cases.

Work-related deafness, tinnitus or other ear conditions

It can be seen from *Table 1* (SWI95) that there is a significant increase for both the male rate and all persons rate from younger to older workers; however, many of the values in the table are based on less than 30 sample cases. *Table 4* (SWC) does not show any significant differences.

INFORMATION ON DATA SOURCES

Voluntary reporting of occupational diseases by specialist doctors (ODIN)

Voluntary surveillance schemes for the reporting of occupational disorders are coordinated by the University of Manchester with HSE funding, and provide information on the incidence of work related ill health. They include schemes known as SWORD¹ (Surveillance of Work-related and Occupational Respiratory Disease), EPIDERM² (Occupational Skin Surveillance Scheme Reported by Dermatologists), MOSS (Musculoskeletal Occupational Surveillance Scheme), and SOSMI (Surveillance of Occupational Stress and Mental Illness)³, and others, and are all incorporated under the umbrella scheme known as ODIN (Occupational Disease Intelligence Network). These schemes count new cases that are caused by work in the opinion of the specialist doctor who sees them. Statistics presented here are for occupational respiratory, skin, musculoskeletal disorders and psychological disorders (including stress). It should be noted that not all cases of occupational disease are seen by participating specialists. In MOSS and SOSMI, unlike the other specialist schemes, the physicians are advised to report cases either caused or made worse by work. In all schemes, a very high proportion of physicians in the relevant specialities participate systematically and voluntarily.

In most of these schemes, there is a sampling process whereby most participating doctors are asked to send in reports for one month in each year, and the numbers of cases that they report are multiplied by 12 in arriving at the estimated annual totals. All the figures presented here are rates derived from the estimated annual totals rather than rates based on actual numbers of reported cases. Therefore, it should be remembered that many of the estimated numbers shown are based on smaller (often considerably smaller) numbers of actual reported cases. The incidence rates for ODIN cases, per 100 000 workers in each occupation or industry, are calculated

using denominators from the Labour Force Survey (LFS). As an alternative to confidence intervals, ratios of incidence rates between old and young workers are included; however, these ratios are for indicative purposes only, as no statistical conclusions can be inferred. It should be noted that information collected by the OPRA scheme has not been included in this analysis due to the fact that the age distribution of cases presented to Occupational Physicians will be biased.

Surveys of self-reported work-related ill health (SWI95, SWC and SWI98/99)

Results from a survey of self-reported work-related illness in 1998/99 (commissioned by the European Union Statistical Office (EUROSTAT)) have recently been published on the HSE website⁴. This is the third survey of self-reported work-related illness undertaken in conjunction with the Labour Force Survey (LFS) to gain a view of work-related illness based on individuals' perceptions. The Health and Safety Executive (HSE) commissioned the second survey in 1995, which is known as SWI95⁵ (surveys of Self-reported Work-related Illness).

These two surveys provide an indication of the overall prevalence of work-related illness and its distribution by major disease groups and a range of demographic and employment-related variables. Responses obviously depend on lay people's perceptions of medical matters, but such perceptions are of interest and importance in their own right. However, they cannot be taken directly as an indicator of the 'true' extent of work-related illness as people's beliefs may be mistaken: they may ascribe the cause of illness to their work when there is no such link; and they fail to recognise a link with working conditions when there is one.

All estimates derived from these surveys are subject to a margin of error. The main factor which determines the width of the margin is the number of sample cases an estimate is based on. In the published report for each survey^{4,5}, the sampling errors have been expressed as 95% confidence intervals. Each of these represents a range of values that has a 95% chance of containing the true value. However, confidence intervals have been quoted whenever there are less than 30 sample cases.

The differences in the design, coverage and level of information collected means that only broad comparisons can be made between the results of each survey, and even these need to be treated with caution. More details about the differences and how comparable estimates were derived can be found in the SWI98/99 published report⁴.

The Omnibus survey, otherwise known as SWC⁶ (Self-reported working conditions in 1995) was designed to help identify features of the job which may be associated with a work-related illness a control population. Respondents were asked the same questions on working conditions that appeared in the follow-up questions for sufferers of work-related illness. In addition, to aid interpretation of the main survey the same questions on chest problems, smoking and general health were asked so that background levels of certain health problems could be determined. The control population questions were included in two monthly cycles of the Office for National Statistics (ONS) Omnibus survey (in August and October 1995).

REFERENCES

- 1 Meredith SK, Taylor VM, McDonald J 'Occupational respiratory disease in the United Kingdom 1989: A report to the British Thoracic Society and the Society of Occupational Medicine by the SWORD project group' *British Journal of Industrial Medicine* 1991 **48** 292-298.
- 2 Cherry N, Meyer J, Adishes A et al. 'Surveillance of occupational skin disease: EPIDERM and OPRA' *British Journal of Dermatology* 2000 **142** 1-8.
- 3 Cherry N 'Recent advances: occupational disease' *British Medical Journal* 1999 **318** 1397-1399.
- 4 Jones J R, Huxtable C S and Hodgson J T 'Self-reported work-related illness in 1998/99: Results from a EUROSTAT ill health module in the 1999 Labour Force Survey summer quarter', 2001. Published on the Internet at www.hse.gov.uk/statistics/causdis/swi9899.pdf

5 Jones J R, Hodgson J T and Clegg T A 'Self-reported work-related illness in 1995' HSE Books 1998 ISBN 0 7176 1509 X. Published on the Internet at www.hse.gov.uk/statistics/2002/swi95.pdf.

6. Jones JR, Hodgson JT, Osman J. Self-reported Working Conditions in 1995: Results from a household survey, HSE Books 1997 ISBN 0 7176 1449 2. Published on the Internet at www.hse.gov.uk/statistics/2002/swc95.pdf.

Table 1: Estimated 1995 prevalence rates of self-reported work-related illnesses caused by work, by age and sex, for people ever employed¹

Type of complaint	Rates per 100 ever employed						Total prevalence (thousands)				
	16-44	Males 45-64	Significant	16-44	Females 45-59	Significant	16-44	All persons 45-59(F)/ 64(M)	Significant	16-44	45-59(F)/
Stress, depression or anxiety	0.60 (0.39, 0.81)	1.2 (0.83, 1.5)	+	0.65 (0.46, 0.85)	1.3 (0.89, 1.7)	+	0.63 (0.48, 0.77)	1.2 (0.97, 1.5)	+	132	139
Stress ascribed illness	0.50 (0.32, 0.68)	1.2 (0.85, 1.5)	+	0.50 (0.33, 0.67)	<i>0.71</i> (0.42, 0.99)		0.50 (0.37, 0.62)	0.98 (0.74, 1.2)	+	105	111
Deafness, tinnitus or other ear conditions	<i>0.14</i> (0.046, 0.23)	1.2 (0.81, 1.5)	+	<i>0.026</i> (0, 0.062)	<i>0.12</i> (0, 0.25)		<i>0.083</i> (0.033, 0.13)	0.70 (0.49, 0.91)	+	17	80
Lower respiratory diseases	0.45 (0.26, 0.64)	0.91 (0.59, 1.2)	+	0.14 (0.041, 0.24)	0.42 (0.18, 0.66)	+	0.30 (0.19, 0.41)	0.69 (0.48, 0.91)	+	63	79
Skin disease	0.20 (0.085, 0.32)	0.22 (0.062, 0.38)		0.18 (0.060, 0.29)	0.080 (0, 0.19)		0.19 (0.11, 0.27)	0.16 (0.057, 0.26)		40	18
Musculoskeletal disorders	2.6 (2.2, 3.0)	4.8 (4.1, 5.5)	+	1.9 (1.5, 2.2)	4.3 (3.6, 5.1)	+	2.2 (2.0, 2.5)	4.6 (4.1, 5.1)	+	470	521
Musculoskeletal disorders affecting the back	1.8 (1.4, 2.1)	2.6 (2.1, 3.1)	+	1.0 (0.79, 1.3)	2.1 (1.6, 2.6)	+	1.4 (1.2, 1.6)	2.4 (2.0, 2.8)	+	298	271
Musculoskeletal disorders affecting the upper limbs or neck	0.79 (0.55, 1.0)	1.9 (1.4, 2.3)	+	0.86 (0.63, 1.1)	2.7 (2.1, 3.2)	+	0.82 (0.66, 0.99)	2.2 (1.9, 2.6)	+	174	253
Musculoskeletal disorders affecting the lower limbs	0.36 (0.20, 0.52)	1.1 (0.75, 1.5)	+	0.12 (0.037, 0.21)	0.53 (0.26, 0.79)	+	0.24 (0.15, 0.34)	0.84 (0.61, 1.1)	+	52	96
All illnesses*	4.3 (3.8, 4.8)	8.5 (7.5, 9.4)	+	3.3 (2.9, 3.8)	6.8 (5.9, 7.7)	+	3.8 (3.5, 4.2)	7.7 (7.1, 8.4)	+	805	875

Source: SWI95

Notes:

In the significant difference column, +/- indicates that the older working age group rate is statistically significantly above/below the younger working age group rate (p<0.05).

Figures in parentheses are upper and lower 95% confidence intervals for each prevalence rate.

Figures in italics are estimates based on fewer than 30 sample cases.

Refer to commentary for further information regarding this data source.

* Includes other types of complaints for which sample numbers are too small to provide reliable estimates.

The method of calculating confidence intervals can produce a negative lower confidence limit for estimates based on very few sample cases. These have been set to zero.

¹ Includes economically inactive and retired, but of working age.

Table 2: Estimated 1998/99 prevalence rates of self-reported illness caused or made worse by work, by age and sex, for people working in the last 12 months

Type of complaint	Rates per 100 employed in last 12 months									Total prevalence (thousands)	
	Males			Females			All persons			16-44	45+
	16-44	45+	Significant difference	16-44	45+	Significant difference	16-44	45+	Significant difference		
Stress, depression or anxiety	1.4 (1.2, 1.5)	1.5 (1.2, 1.7)		1.5 (1.3, 1.7)	2.0 (1.7, 2.2)	+	1.4 (1.3, 1.6)	1.7 (1.5, 1.9)	+	270	167
Musculoskeletal disorders	1.8 (1.6, 2.0)	2.5 (2.2, 2.8)	+	1.6 (1.4, 1.7)	2.4 (2.1, 2.7)	+	1.7 (1.6, 1.8)	2.5 (2.3, 2.7)	+	318	245
All illnesses*	4.1 (3.8, 4.4)	5.5 (5.1, 5.9)	+	4.2 (3.9, 4.5)	5.4 (5.0, 5.9)	+	4.1 (3.9, 4.3)	5.5 (5.2, 5.8)	+	780	543

Source: SW19899

Notes:

In the significant difference column, +/- indicates that the older workers' rate is statistically significantly above/below the younger workers' rate (p<0.05).

Figures in parentheses are upper and lower 95% confidence intervals for each prevalence rate.

Refer to commentary for further information regarding this data source.

*Includes other types of complaints for which sample numbers are too small to provide reliable estimates.

Table 3: Estimated annual rates of incidence of cases of work-related illness reported by specialist doctors to ODIN by age, sex and diagnostic category, 1998-2000, Great Britain

Diagnosis	Annual incidence rates based on information for 1998-2000, per 100000									Total estimated cases between 1998 and 2000	
	Males			Females			All persons			16-44	45+
	16-44	45-64	Ratio of 45-64 to 16-44	16-44	45-64	Ratio of 45-64 to 16-44	16-44	45-64	Ratio of 45-64 to 16-44		
Anxiety/Depression*	7	11	1.6	5	6	1.3	6	9	1.5	2796	2364
Post-traumatic stress disorder*	1	1	0.9	-	-	-	1	1	0.9	384	204
Upper Limb disorders	3	5	1.5	4	6	1.3	4	5	1.4	2712	2208
Spine/back disorders	2	2	0.9	1	2	1.9	2	2	1.3	1116	816
Lower Limbs	1	1	1.6	-	1	-	-	1	-	216	288
Contact dermatitis	5	6	1.0	6	4	0.8	6	5	0.9	4007	2052
Other short latency skin disease	-	1	-	1	1	0.7	1	1	1.0	430	254
Asthma	2	2	1.4	1	1	1.5	1	2	1.4	844	673
Other short latency respiratory disease	1	1	0.9	-	-	-	-	-	-	257	169

Source: ODIN

Notes:

"-" Can mean zero or rounds to zero

As confidence intervals are not appropriate, the magnitude of difference between younger workers and older workers has been expressed in the form of the ratio '45-64 rate/'16-44'. However, these ratios are for indicative purposes only, and no statistical conclusions can be inferred.

Refer to commentary for further information regarding this data source.

The figures in this table exclude information collected by the OPRA scheme.

Table 4: Percentage of current workers who had ever experienced certain working conditions in 1995, by age and by sex

Working condition	Percentage of current workers ever experiencing certain working conditions								
	Males			Females			All persons		
	16-44	45-64	Significant	16-44	45-64	Significant	16-44	45-64	Significant
Having too much to do (August 1995)*	62 (56, 68)	57 (49, 65)		53 (47, 59)	57 (48, 67)		57 (53, 62)	57 (51, 63)	
Having too much to do (October 1995)*	70 (64, 75)	66 (58, 74)		69 (63, 75)	73 (65, 81)		69 (65, 73)	69 (64, 75)	
Unable to choose or change the order of tasks or method of working	33 (29, 37)	36 (31, 42)		31 (27, 35)	33 (26, 39)		32 (29, 35)	35 (31, 39)	
Getting insufficient help and support from people in charge when needed	20 (16, 23)	19 (15, 24)		23 (20, 27)	16 (11, 21)	-	22 (19, 24)	18 (15, 22)	
Being exposed to breathing fumes, dusts and other harmful substances	45 (41, 49)	46 (40, 52)		18 (14, 21)	21 (16, 27)		32 (29, 35)	35 (31, 39)	
Requiring to handle or touch harmful substances or materials	36 (32, 40)	30 (25, 36)		19 (15, 22)	18 (13, 23)		27 (25, 30)	25 (21, 29)	
Involved in tasks resulting in ringing in ears or a temporary feeling of deafness	12 (9, 14)	9 (6, 12)		4 (3, 6)	5 (2, 8)		8 (6, 10)	7 (5, 10)	
Sitting or standing on a vibrating machine or in a vibrating vehicle	13 (10, 16)	9 (6, 13)		2 (1, 3)	0.3 (0.008, 2)		8 (6, 9)	5 (3, 7)	
Repeating the same sequence of movements many times	64 (60, 68)	64 (58, 69)		68 (64, 73)	65 (58, 71)		66 (63, 69)	64 (60, 68)	
Working in awkward or tiring positions	48 (44, 52)	43 (38, 49)		46 (42, 51)	44 (38, 51)		47 (44, 50)	44 (39, 48)	
Using appreciable force	39 (35, 43)	29 (23, 34)	-	23 (19, 26)	18 (13, 23)		31 (28, 34)	24 (20, 28)	-
Lifting or moving heavy loads	59 (55, 64)	47 (41, 53)	-	45 (41, 50)	40 (34, 47)		52 (49, 56)	44 (40, 48)	-
Twisting or stooping when lifting or moving heavy loads	82 (78, 87)	91 (86, 96)	+	79 (74, 85)	87 (80, 94)		81 (78, 84)	89 (85, 93)	+

Source: SWC95

Notes:

In the significant difference column, +/- indicates that the older current workers' rate is statistically significantly above/below the younger current workers' rate (p<0.05).

Figures in parentheses are upper and lower 95% confidence intervals for each percentage.

Refer to commentary for further information regarding this data source.

* A pooled estimate has not been shown as responses differed significantly between surveys.