

Incidence of suicide in the veterinary profession in England and Wales

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THERE have been concerns for many years that mortality due to suicide is higher in the veterinary profession than in the general population. For example, a survey of the causes of mortality in British veterinarians reported an increase in mortality from suicide (Kinlen 1983); increased mortality from suicide has also been reported in the American veterinary profession (Blair and Hayes 1980, Miller and Beaumont 1995). The high suicide rate among veterinarians has even led to the publication of an article dealing with how to cope with suicide (Anon 2000).

There has been much speculation as to why the incidence of death by suicide is higher in the profession than in the general population. Occupational stress, stigmatisation of mental health disorders within the veterinary profession and a reluctance of veterinarians contemplating suicide to seek medical help, professional and social isolation, and ease of access to lethal drugs have regularly been implicated as factors leading to an increased incidence of suicide (Blair and Hayes 1980, Adkin 2000, Anon 2000, Jeyaretnam and others 2000, Tutt 2000). Despite the concerns about this high incidence, there are very few published data on the number and incidence of suicides by British veterinarians over the past three decades. The aim of this study was to collate data from the Office for National Statistics on the number and incidence of veterinarian suicides, and to compare this incidence with that in the general population and other health care professions.

Data on death registrations for all deaths in England and Wales between 1979 to 2000 (with the exception of 1981, which was excluded because the data were incomplete for that particular year) of individuals whose occupation was recorded as veterinarian, where an inquest verdict of suicide (International Classification of Diseases [ICD] codes E950-E959) or undetermined cause ('open verdicts') (ICD codes E980-E989, excluding E988.8) had been registered, were supplied by the Office for National Statistics. Open verdicts were included because there is evidence that the majority of these are suicides, although data on the number of deaths due to undetermined causes were only available from 1990 onwards (Kelly and Bunting 1998). Similar data were obtained for the

death entries where the occupation was recorded as medical practitioner or dental practitioner.

The proportional mortality ratio (PMR) is the observed number of suicides divided by the expected number of suicides, expressed as a percentage, and allows the incidence of suicide in a particular occupation to be compared with the general population as well as other occupations. The expected number of deaths was computed by applying the proportion of total deaths due to suicide in the general population to the total deaths in the occupational group of interest (Kelly and Bunting 1998). Consequently, a PMR of suicide of 100 means that the given occupation has the same proportion of all deaths certified as suicide as that of the general population of England and Wales, a PMR of 50 means that the given occupation has half the proportion of all deaths certified as suicide compared with the general population of England and Wales, whereas a PMR of 200 means that the given occupation has double the proportion of all deaths certified as suicide compared with the general population of England and Wales. The proportion of deaths caused by suicide relative to the number of deaths by other causes in the veterinary profession was compared with those for medical and dental practitioners by the chi-squared test with Yates's correction. Data were considered significant at $P < 0.05$.

Table 1 shows the number of suicides and the PMR of male and female veterinarians aged 20 to 74 years, for 1979 to 1980 and 1982 to 1990, and includes data from other health care professions for comparison. Although the actual number of deaths by suicide is lower than for medical or dental practitioners, the PMR for suicide is considerably higher for the veterinary profession and is higher than other health care professions. A similar finding was observed between 1991 and 2000 for male and female veterinarians (Table 2). The most common method of suicide was self-poisoning by solid or liquid substances for both male and female veterinarians (Table 3).

Although the absolute number of suicides by veterinarians is relatively small compared with other occupational groups such as farmers and medical practitioners, the PMR for suicide by veterinarians is one of the highest of all occupational groups. The finding of a high PMR in both male and female veterinarians suggests that the number of suicides relative to deaths due to other causes is much higher in the veterinary profession than in the population as a whole, and is higher than in other health care professions such as medical or dental practitioners (Tables 1, 2). Although the PMR was higher for females in both time periods, the small number of female deaths by suicide and other causes means that the higher PMR should be interpreted with caution. While the PMR is one of the most widely used methods to compare the incidence of suicide between various occupations and with the population as a whole, it should be acknowledged that the PMR is affected by the relative frequency of other causes of death. If mortality from all causes is low in a given population, a high PMR from suicide may be observed.

A detailed analysis of the age, background, previous health history and type of veterinary job undertaken by the suicide victims was not possible due to the restrictions imposed by the Data Protection Act, which serves to protect an individual's privacy. However, 10 of the 26 male veterinarian suicides that occurred between 1991 and 2000 were individuals younger than 45 years of age, which suggests that veterinarian suicides are not confined to a restricted age range. There is little evidence to suggest that the incidence of suicide in male veterinarians has increased since 1991 compared with 1979 to 1990. In contrast, the PMR from suicide is much higher for females since 1993 than in 1979 to 1990, but the small numbers of deaths by suicide and by other causes mean that the high PMR from suicide since 1993 should be interpreted with caution. However, an elevated incidence of suicide has

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TABLE 1: Mortality from suicide in male veterinarians, medical practitioners and dental practitioners, and in female veterinarians and medical practitioners, aged 20 to 74 years, in England and Wales in 1979 to 1980 and 1982 to 1990

	Numbers of deaths by Suicide	Other causes	Total number of deaths	Proportional mortality ratio (95 per cent confidence interval)
Male				
Veterinarians	35	348	383	361 (252-503)*
Medical practitioners	141	4181	4322	162 (106-262)
Dental practitioners	38	934	972	194 (137-266)
Female				
Veterinarians	7	23	30	414 (166-853)†
Medical practitioners	50	649	699	193 (143-254)

* Significantly higher for veterinarians than for medical and dental practitioners (chi-squared=32.1, $P < 0.0001$ and chi-squared=13.7, $P < 0.001$, respectively)

† Significantly higher for veterinarians than for medical practitioners (chi-squared=8.3, $P < 0.005$)

been reported in female medical practitioners compared with male colleagues (Hawton and others 2001, Schernhammer and Colditz 2004).

Many reports have highlighted that the probability of committing suicide will depend to some extent on the ease of access to effective methods (Kelly and Bunting 1998). Previous studies of the medical profession have found that the most common strategy for doctors wishing to commit suicide was self-poisoning with drugs (Hawton and others 2000). Table 3 indicates that, as with medical practitioners, self-poisoning was the most common method of suicide by both male and female veterinarians. Seventy-six per cent of male veterinary suicides were by poisoning by solid or liquid substances, whereas only 20 per cent of all male suicides were effected in this way. The veterinary profession had the highest percentage of male suicides using this method of all occupational groups; pharmacists (61 per cent) and medical practitioners (50 per cent) are the professions with the next highest proportion of suicides by poisoning by solid or liquid substances (Kelly and Bunting 1998). This trend appears to be the same for female veterinarians. However, there were fewer female veterinary suicides between 1982 and 1996 than male veterinary suicides, and poisoning by solid or liquid substances was the most common suicide method in the general female population. This was in contrast to males, where poisoning by other gases/vapours and hanging/suffocation were the two most common methods of suicide.

Although the absolute number of deaths by suicide is low compared with other professions, the veterinary profession has one of the highest PMRS of suicide of any occupation. It is hoped that this report will stimulate discussion as to how the incidence of suicide can be lowered within the veterinary profession. Addressing this issue is fraught with difficulties due to the relatively low absolute numbers of suicides and the multifactorial nature of the problems facing veterinarians contemplating suicide. Despite the difficulties in reducing the incidence of suicide within the veterinary profession, there have been numerous suggestions as to how the issue of suicide reduction may be addressed. For example, some authors have argued that health promotion initiatives designed to reduce occupational stressors and enhance personal and interpersonal skills for managing stress are important in occupations with a high risk of suicide (Platt and Hawton 2000). It has been highlighted that there is a need for veterinarians to recognise mental health problems in themselves and to seek help before the problems become chronic and suicidogenic (Platt and Hawton 2000). Other veterinarians feel that there is a need to further promote and financially support existing veterinary health initiatives such as the Vet Helpline and the Veterinary Surgeons' Health Support Programme. In addition, restricting access to lethal drugs for those considered to be at a high risk of suicide has been regarded to be a prime consideration by some authors, given that the majority of veterinarians commit suicide by self-poisoning with solid or liquid substances (Clark and Jones 1979, Cordell and others 1986, Platt and Hawton 2000). Finally, the fact that many veterinarians deal with the issue of euthanasia as a routine part of their professional life may lead to some members of the profession having a different attitude towards suicide compared with the general population.

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TABLE 2: Mortality from suicide and undetermined intent in male veterinarians, medical practitioners and dental practitioners, and in female veterinarians and medical practitioners, aged 20 to 74 years, in England and Wales in 1991 to 2000

	Number of deaths by Suicide and undetermined causes	Number of deaths by Other causes	Total number of deaths	Proportional mortality ratio (95 per cent confidence interval)
Male				
Veterinarians	26	269	295	374 (244-548)*
Medical practitioners	141	3278	3419	175 (147-206)
Dental practitioners	40	707	747	227 (162-309)
Female				
Veterinarians	6	30	36	1240 (446-2710)†
Medical practitioners	47	710	757	462 (339-614)

* Significantly higher for veterinarians than for medical practitioners (chi-squared=12.8, P<0.0005) and approaches significance for dental practitioners (chi-squared=3.7, P=0.054)

† Significantly higher for veterinarians than for medical practitioners (chi-squared=4.5, P<0.05)

TABLE 3: Percentage of suicides by method for veterinarians and combined suicides from all occupations, for males aged 20 to 64 and for females aged 20 to 59, in England and Wales, 1982 to 1996

	Poisoning by						Number of suicides
	Solid or liquid substance	Other gases and vapours	Hanging and suffocation	Drowning	Firearms and explosives	Other	
Male							
Veterinarians	76	3	5	0	16	0	38
All men	20	27	27	6	5	16	45,445
Female							
Veterinarians	89	11	0	0	-	0	9
All women	46	10	17	9	-	18	14,082

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References

- ANON (2000) Coping with suicide. *In Practice* **22**, 340-342
- ADKIN, P. (2000) Coping with suicide. *Veterinary Record* **147**, 56
- BLAIR, A. & HAYES, H. M. (1980) Cancer and other causes of death among US veterinarians. *International Journal of Cancer* **25**, 181-185
- CLARK, M. A. & JONES, J. W. (1979) Suicide by intravenous injection of a veterinary euthanasia agent: report of a case and toxicologic studies. *Journal of Forensic Sciences* **24**, 762-767
- CORDELL, W. H., CURRY, S. C., FURBEE, R. B. & MITCHELL-FLYNN, D. L. (1986) Veterinary euthanasia drugs as suicide agents. *Annals of Emergency Medicine* **15**, 939-943
- HAWTON, K., CLEMENTS, A., SAKAROVITCH, C., SIMKIN, S. & DEEKS, J. J. (2001) Suicide in doctors: a study of risk according to gender, seniority and speciality in medical practitioners in England and Wales, 1979-1995. *Journal of Epidemiology and Community Health* **55**, 296-300
- HAWTON, K., CLEMENTS, A., SIMKIN, S. & MALMBERG, A. (2000) Doctors who kill themselves: a study of the methods used for suicide. *International Journal of Medicine* **93**, 351-357
- JEYARETNAM, J., JONES, H. & PHILIPS, M. (2000) Disease and injury among veterinarians. *Australian Veterinary Journal* **78**, 625-629
- KELLY, S. & BUNTING, J. (1998) Trends in suicide in England and Wales, 1982-1996. *Population Trends* **92**, 29-41
- KINLEN, L. J. (1983) Mortality among British veterinary surgeons. *British Medical Journal* **287**, 1017-1019
- MILLER, J. M. & BEAUMONT, J. J. (1995) Suicide, cancer, and other causes of death among California veterinarians, 1960-1992. *American Journal of Industrial Medicine* **27**, 37-49
- PLATT, S. & HAWTON, K. (2000) Suicidal behaviour and the labour market. In *The International Handbook of Suicide and Attempted Suicide*. 1st edn. Eds. K. Hawton, K. Van Heeringen. New York, Wiley, pp 309-384
- SCHERNHAMMER, E. S. & COLDITZ, G. A. (2004) Suicide rates among physicians: a quantitative and gender assessment (meta-analysis). *American Journal of Psychiatry* **161**, 2295-2302
- TUTT, K. (2000) Coping with suicide. *Veterinary Record* **147**, 228