

Mortality among inmates of a common lodging house

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SUMMARY. A retrospective study of homeless men revealed a significantly different distribution of cause of death compared with the general population. A significant relative excess mortality was shown for malignant and respiratory diseases (including tuberculosis) and a significantly reduced relative mortality was shown for heart and cerebrovascular diseases. Seasonal factors appeared to affect mortality.

Introduction

SURVEYS of homeless men have emphasized a variety of correlations between their lifestyle and other factors. Criminality,¹⁻⁴ alcoholism,^{2,5-8} homosexuality,^{2,9} and poverty^{2,10-13} have all been noted. However, the relationship of these factors to a vagrant lifestyle appears less impressive than the relationship to morbidity.^{2,14,15}

The homeless form a subgroup with a pattern of morbidity different from the general population which, when allied to their adverse social circumstances, means that they require more than the average amount of medical care.¹⁶⁻¹⁸ Scott and colleagues¹⁶ revealed that less than half were free from chronic disease, and Alstrom and colleagues¹⁹ reported a significant excess mortality for all age groups among a homeless population of 6,032.

Vagrants and other homeless people tend to be attracted to the large cities where they are housed in hostels and lodging houses, some of which are in various stages of decay as well as being overcrowded. Living conditions are therefore usually poor and inimical to the maintenance of a state of good health.²⁰ These conditions accentuate the hazards of city life. Because analysis of disease trends shows that the environment is the main determinant of the state of general health in any population,²¹ an examination of mortality rates and causes in homeless people would be of general interest, especially as many of them are heavy drinkers and display the effects of long-term alcohol abuse.² Alstrom and colleagues reported that mortality rates of homeless men in Sweden were raised for all causes of death studied.¹⁹

Method

Information for the purpose of this study was obtained from a large municipal common lodging house situated in the City of Manchester. The hostel's records of men known to have died between January 1977 and June 1981 were examined and their names, dates of birth, dates of death and length of time spent in hostel accommodation were noted.

The average age at death of the inmates of the lodging houses was calculated and the months in which death occurred were analysed.

The primary diagnosis of cause of death was determined from section II of the death certificates kept by the Area Health Authority. The primary cause of death in each case was assigned to one of seven categories: malignant disease, respiratory tuberculosis, heart disease (all forms), bronchitis, emphysema and asthma, cerebrovascular disease, accidents and injuries (International Classification of Disease XVIII) and other diseases. The categories of malignant disease were divided into three subcategories: malignant disease of the gastrointestinal system, malignant disease of the respiratory system, and other forms of malignancy.

The number and causes of deaths were tabulated for each 10-year age group. Office of Population Censuses and Surveys mortality statistics²² were used to determine the proportion of the total number of deaths in each age group which would be expected in the seven categories studied. If the pattern of cause of deaths in the homeless were the same as in the normal population, then the distribution of actual numbers of deaths from each cause would be similar to the expected numbers. The observed and expected frequencies were summed over the age groups (35-44, 45-54, 55-64, 65-74, 75-84, 85-89 years) and a chi-square test carried out.

Table 1. Comparison of deaths in months and seasons of the year.

	Observed	Expected
January	8	7.55
February	12	7.46
March	10	7.24
April	7	6.53
May	3	6.39
June	5	5.87
July	3	5.90
August	2	5.65
September	4	5.67
October	10	6.09
November	5	6.04
December	9	7.61
Winter (October-March)	54	41.99
Summer (April-September)	24	36.01

$\chi^2 = 7.44$; $df = 1$, $P < 0.01$.

Results

Seventy-eight homeless men were identified and included in the survey. Information on a further seven men known to have died was insufficient for their inclusion.

There was a wide age range, 35-79 years. The average age at death was 61 years and the modal age was 65 years. Forty-nine of the men (63 per cent) had been residing at the hostel for more than two years and 23 men (30 per cent) for over 10 years.

Table 1 shows that the distribution of deaths between the summer (April-September) and winter (October-March) months was significantly different from that expected ($\chi^2 = 7.44$: $df = 1$, $P < 0.01$). Two thirds of all deaths occurred in the winter months, and six out of nine deaths from chronic bronchitis, emphysema and asthma occurred during the winter months.

Table 2 shows that there was a significantly different pattern of mortality compared with the general population ($\chi^2 = 44.69$: $df = 5$, $P < 0.001$). There was a marked preponderance of deaths from respiratory diseases and malignancy, and correspondingly less deaths from heart and cerebrovascular disease.

Table 3 shows that there was a different distribution of malignant disease compared with the general population ($\chi^2 = 10.07$: $df = 2$, $P < 0.01$). Cancers of the respiratory and digestive systems were relatively more common.

Discussion

This study covered a series of men who had been homeless for some length of time. Table 2 suggests that the distribution of cause of death differs considerably

Table 2. Comparison of cause of death among inmates of lodging houses with general population.

	Age group (years)												Total	
	35-44		45-54		55-64		65-74		75-84		85-89			
	O	E	O	E	O	E	O	E	O	E	O	E	O	E
Cancer	0	1.32	6	4.27	11	6.65	10	7.33	2	1.21	0	0.13	29	20.9
Respiratory disease, tuberculosis	1	0.16	1	0.15	3	0.11	4	0.13	0	0.08	0	0.04	9	0.67
Heart disease (all forms)	1	1.9	5	7.3	7	9.5	4	12.465	1	2.06	0	0.33	18	35.55
Bronchitis, emphysema, asthma*	0	0.1	0	0.45	1	1.08	7	2.46	1	0.496	0	0.067	9	4.65
Cerebrovascular disease	0	0.305	1	0.90	0	1.41	1	3.29	0	0.74	0	0.137	2	6.78
Accidents and injuries (ICD XVII)	3	1.37	2	1.11	0	0.68	0	0.498	0	0.085	0	0.026	5	3.79
Other	1	0.85	1	1.82	0	2.57	1	0.83	2	1.33	1	0.27	6	7.67
Total	6	6	16	16	22	22	27	27	6	6	1	1	78	78

$\chi^2 = 44.69$: $df = 5$, $P < 0.001$. O, observed; E, expected.

*Because of the small numbers involved the mortality figures for respiratory tuberculosis and bronchitis, emphysema and asthma were combined to give the mortality from respiratory disease, so that a valid chi-square test could be calculated.

Table 3. Comparison of deaths from malignant disease with general population.

Cause of death	Age group (years)										Total	
	45-54		55-64		65-74		75-84					
	O	E	O	E	O	E	O	E	O	E		
Cancer of digestive system (including oropharyngeal region)	3	2.04	4	3.40	3	3.13	1	0.648	11	9.22		
Cancer of respiratory system	3	2.34	7	5.04	7	4.36	1	0.749	18	12.49		
Other	0	1.62	0	2.56	0	2.51	0	0.597	0	7.29		
Total	6	6	11	11	10	10	2	2	29	29		

$\chi^2 = 10.07$: $df = 2$, $P < 0.01$.

from that in the general population. There was a relative prevalence of mortality from tuberculosis, malignant disease and bronchitis, emphysema and asthma. This finding is in agreement with an occasional paper from the Royal College of General Practitioners²³ which reported a markedly increased incidence of mortality from tuberculosis, bronchial carcinoma and gastrointestinal diseases for those living in the inner city areas.²

Diagnosis of cause of death

Death certificates are an important and useful epidemiological tool. However, they do have certain pitfalls regarding the accuracy of diagnosis at death, and a working party of the Royal College of Physicians reported that 20 per cent of death certificates recorded the wrong diagnosis at death. In this study, autopsy had been performed on 63 men (81 per cent), thus the majority would have had a reliable diagnosis of the cause of death.

Smoking, drinking and stress

Smoking and drinking are deep-rooted habits in this subculture and presumably play a part in the development of respiratory and gastrointestinal carcinoma. Previous investigations²⁴ into alcoholism have revealed a high excess mortality from malignant neoplasms of the digestive and respiratory organs. One author²⁵ suggested that the lack of economic security among the lower socioeconomic classes is stressful and so habits which are harmful to health are often adopted. The importance of social factors in morbidity and mortality from tuberculosis is well documented.²⁶

Weather conditions

Table 1 shows a concentration of deaths occurring in the winter months, and this suggests that adverse weather conditions are important in the mortality of this section of society—six out of nine chronic respiratory patients died during this period.

The pattern of mortality exhibited is probably related to the poor social conditions under which these men lived. H. Asander (personal communication with C. H. Alstrom, 1973) reported that 40 per cent of the men who died in his series were men who were worn out, impoverished and who had not received adequate supervision or help. In 30 years the National Health Service has failed to meet its declared objective of providing effective health care to all members of our society according to their needs rather than their resources. Other areas of concern which feature so dominantly in this population, such as poverty, housing and education, must also be remedied as health services alone cannot heal the damage done by deprivation.

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