Papers and Originals

Morbidity and Mortality from Heroin Dependence

1: Survey of Heroin Addicts Known to Home Office

THOMAS H. BEWLEY,* M.A., M.D., F.R.C.P.I., D.P.M.; OVED BEN-ARIE,† M.B., CH.B., D.P.M.

I. PIERCE JAMES,‡ M.A., M.B., D.P.M.

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The methods used for compiling the Home Office index or "register" have previously been explained, as have the methods used in an earlier review of 450 new cases of heroin addiction first recorded between 1954 and 1964 (Bewley, 1965). A further study is now presented of 1,272 heroin addicts. This number includes all cases first known to the Home Office from 1947 to the end of 1966 (19 cases in which addiction had started before 1947 are excluded from this survey). During this period 969 male and 303 female new cases of heroin addiction were recorded by the Dangerous Drugs Branch of the Home Office (1947-66). Thirty-five of these were "therapeutic" addicts, having become addicted in the course of medical treatment. The remainder were "non-therapeutic" addicts who first became addicted some other way, generally from contact with another addict. One hundred and forty-seven had been born outside the United Kingdom or Eire (99 in North America and 48 elsewhere); 30 are at present known to be out of the United Kingdom (nine of these having been

Mortality of Heroin Addicts

Heroin addiction in Britain at present carries a high mortality risk. Sixty-nine non-therapeutic heroin addicts known to the Home Office had died, 65 between 1960 and the end of 1966. The ages at, and causes of, death were reviewed for all 69 cases from hospital notes, death certificates, and reports from coroners' inquests. There has been an increase in the number of deaths and a decrease in the mean

TABLE II.—Present Status of 1,272 Heroin Addicts

Year First Noted	Taking Opiates, 1966	Not Known to be Taking Opiates		Dead	Total
		In Hospital, Prison, or Similar Institution	Reason Unknown		
1947	1	—	—	—	1
1948	—	1	—	—	1
1949	—	—	—	—	Nil
1950	2	—	—	—	2
1951	—	1	—	—	1
1952	—	3	—	2	5
1953	—	2	—	2	4
1954	3	6	—	15	24
1955	2	3	2	4	11
1956	5	3	—	2	10
1957	2	—	—	5	7
1958	8	1	—	2	11
1959	5	1	—	5	11
1960	10	6	2	6	24
1961	19	13	17	7	56
1962	39	11	19	3	72
1963	36	34	13	7	90
1964	85	42	27	8	162
1965	164	62	24	9	259
1966	509	—	—	12	521
Total	890*	189†	104‡	89	1,272

* 2 out of United Kingdom.

† 1 out of United Kingdom.

‡ 27 out of United Kingdom.

age of death with the greater number of younger addicts at risk (see Fig.). Among British-born non-therapeutic heroin addicts the deaths before 1965 occurred at a mean age of 30.3 years, compared with a mean age of 24.8 years for the deaths during 1965-6. Fifty per cent. of all deaths occurred before the age of 28 years.

The causes of death are shown in Table III. Nine addicts committed suicide (three by hanging, two with coal gas, and four by other methods), while seven more died from an overdose of some drug, other than the one to which they were currently addicted, in circumstances suggesting suicidal intent even though this was not always indicated in the coroner's verdict. Sixteen addicts died from an apparently "accidental" overdose of their drugs and there were four sudden deaths, probably the result of self-administration of a narcotic drug. There were six violent deaths (two addicts were murdered) and 15 deaths were directly due to sepsis (septicaemia, endocarditis,

TABLE I.—Date First Known to Home Office

	Under 20	20-34	35-49	50+	Total
1947	—	—	1	—	1
1948	—	—	1	—	1
1949	—	—	—	—	Nil
1950	—	1	—	1	2
1951	—	1	—	—	1
1952	—	5	—	—	5
1953	—	4	—	—	4
1954	—	13	2	9	24
1955	—	8	1	2	11
1956	1	8	1	—	10
1957	—	4	3	—	7
1958	—	7	1	3	11
1959	1	6	1	3	11
1960	1	14	7	2	24
1961	5	38	11	2	56
1962	7 (10%)	58 (81%)	6 (8%)	1 (1%)	72
1963	16 (18%)	64 (71%)	9 (10%)	1 (1%)	90
1964	36 (22%)	107 (66%)	14 (9%)	5 (3%)	162
1965	105 (41%)	146 (56%)	6 (2%)	2 (1%)	259
1966	198 (38%)	298 (57%)	22 (4%)	3 (1%)	521
	370	782	86	34	1,272

deported). There have been 16 deaths (and three possible further deaths) among the therapeutic addicts and 69 deaths (with one possible further death) among the non-therapeutic addicts. There has been a steady increase in the rate at which new cases have been recorded and an increase in the number of younger addicts (Table I). The current status of all these addicts (in 1966) is shown in Table II.

* Consultant Psychiatrist, Tooting Bec Hospital, London S.W.17.

† Registrar, Tooting Bec Hospital, London S.W.17.

‡ Medical Officer, Home Office Prison and Borstal Service (formerly Tooting Bec Hospital).

or pulmonary infections). Of the remaining 12 "natural deaths" almost all were directly or indirectly due to the consequences of drug addiction. (For example, death from inhalation of vomit during a barbiturate withdrawal fit or death in the course of continuous narcosis as part of treatment of heroin addiction.)

Decreasing age of death among non-therapeutic heroin addicts in Britain during the present decade.

TABLE III.—Cause of Death Among Non-therapeutic Heroin Addicts in Britain 1955–66

	Males	Females	Percentage of All Deaths
Suicide	9	—	} 23.2
Suicidal overdose	5	2	
Narcotic overdose (accidental)	13	—	} 29.0
Sudden death ("addiction")	4	—	
Violent death	5	1	} 47.8
Septic conditions	12	3	
Other "natural causes"	10	2	
Total	58	11	100.0

Discussion

Incidence

There has been a steady increase in the rate at which new cases of heroin addiction are being recorded, particularly in the younger age groups. This rising curve is likely to level off when a larger proportion of those susceptible to heroin addiction have been exposed to the drug, though there is no sign of this happening yet. So far, most heroin addicts have been found to continue to use heroin for at least some part of each year following first notification by the Home Office. There are not enough addicts who have taken drugs for a sufficiently long time to know if the American finding of an apparent "maturing out" (or dropping out) of opiate addiction as the addict grows older will be repeated here (Winnick, 1962, 1964). The number of new cases reported continues to double every 16 months, and if this continues at least 800 new cases will be recorded in 1967 and 1,200 in 1968. It is thus probable that there will be a rapid increase in the number of cases referred to treatment centres in the next two years, particularly in London.

Deaths

Published data suggest that the death rate of narcotic addicts in the United States is about 10 per 1,000 each year (Vaillant,

1965). In New York about 350 deaths a year occur among 35,000 (non-therapeutic) addicts (Helfern and Rho, 1966; Louria *et al.*, 1967; Kavalier-Menachem, 1967)—an annual mortality rate of about 10 per 1,000.

In Britain there were 69 known deaths of non-therapeutic heroin addicts up to the end of 1966. The number of known active heroin addicts in each year increased to 899 in 1966. Calculations from Home Office information showed that there had been 2,532 "addict years at risk" during the period. This indicates a mortality rate of 27 per 1,000 per annum. The expected number of deaths in a British population of similar demographic characteristics to the heroin addicts would have been 2.45. Thus British heroin addicts have a mortality rate 28 (20–35) times the normal rate and over twice that of heroin addicts in New York, and for every 37 addicts known to the Home Office each year there is one death. This apparently higher death rate in the United Kingdom might be due to a failure to record all deaths associated with heroin use correctly in New York or to overestimating the number of addicts there. Great caution is necessary in interpreting the death rates, as previous estimates of the number of New York addicts have varied from 20,000 to 100,000, though the current estimates of prevalence by the New York State Narcotic Register Project are the best so far available (Kavalier-Menachem, 1967). The use by British addicts of much larger amounts of heroin (often in combination with other drugs such as cocaine and methylamphetamine) could also be a factor. The causes of death (overdose, suicide, and septic complications) were the same in both countries. Most deaths could be attributed to self-administration of drugs or to the direct consequences of chronic drug intoxication on personality or psychological function.

The fact that heroin is prescribed for addicts in the United Kingdom, and that an addict knows the amount he is taking, has not lowered the death rate, nor has the fact that the British addict's legally obtained heroin is free from potentially dangerous adulterants.

Summary

Between 1947 and 1967 1,272 new cases of heroin addiction were recorded by the Home Office. Of these, 890 had taken opiates in 1966, 89 had died, and of 293 not known to be taking opiates 189 had been in prison or in hospital or a similar institution. The rate of recording new cases had increased, doubling every 16 months. The mortality rate among "non-therapeutic" addicts was 28 times the expected rate and chiefly due to sepsis, overdose, and suicide. Of new cases in the past two years 40% were under the age of 20. Possibly 800, followed by 1,200 further cases, will be recorded for 1967 and 1968.

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