

MORTALITY BY HABITS REPRESENTATION

An Address Before the Convention of the Actuarial Society of America, at Montreal

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The experience here submitted is the result of an attempt to classify insured lives by amount and kind of alcoholic beverages used as indicated by the answers given to the following typical questions in the applications for insurance:—(a) If you use wine, spirits, malt liquors or other alcoholic beverages, state kind used and how much in any one day at the most? (b) How frequently do you use the amount stated? (c) If you use them daily, weekly or monthly, state kind and average for the past two years? (d) Have you used any of them to the extent of intoxication during the past ten years? (f) If a total abstainer how long have you been so?

The material was grouped under four definitions which must be construed broadly as indicated by the sub-heads consisting of rulings made in the course of classification. It is believed that while nearly all users take various forms of alcoholic drinks on occasion there is a tendency to favor some particular kind, brewed, fermented or distilled. It will be noted that Group "B" (Moderate Users) consists as nearly as may be of those whose statements indicated that their consumption did not exceed Anstie's physiological limit of 1½ ounces of absolute alcohol per diem. The classification was as follows:—

A. Total Abstainers, exclusive of a small number where the period of abstinence was short and the cases were classified in accordance with previous habits, for the most part in "B."

B. Moderate Users.—Users of wine only, not exceeding four glasses of light or three of heavy wine daily.

Beer or light ale, not daily or more than three in any one day at most.

Porter or heavy ale, not daily or more than two in any one day at most.

Light wine, not daily or more than four in any one day at most.

Heavy wine, not daily or more than three in any one day at most.

Whiskey, brandy, etc., not daily or more than two in any one day at most.

Daily, one glass, either beer or wine or whiskey.

C. Regular Beer Drinkers.—Persons taking four or more glasses of beer or ale in any one day, or five or more a week, or a daily use of one or more.

Persons also taking wine or whiskey moderately, but not enough for class "D."

No "wine only" cases in this group.

D. Regular Spirit Drinkers.—Whiskey, brandy, gin, etc., daily, or three or more "in any one day at most."

Wine daily, five glasses light wine, four of heavy, or more.

Two glasses either whiskey or wine or beer daily.

Without doubt many criticisms may justly be made of this classification. Any two persons going over the material would inevitably disagree as to a considerable percentage. Groups "C" and "D" contain cases excluded from "G" and were generally more liberal users. The relatively small numbers in "C" and "D" suggest the weight given to the habits statement in selection and the general results indicate that no admittedly heavy drinkers were taken. Notwithstanding the evident difficulties of classification on the plan outlined it is believed that the groups are fairly homogeneous and represent real differences. The experience supports this view in so far as the rates of mortality vary in a consistent manner.

It is commonly assumed that the consumption of alcohol among those who use it at all tends to increase with age. It would perhaps be more accurate to say that the individual rate of consumption is extremely variable. In this particular the use of alcohol differs from other consumption habits and

the difference is important. Among those who are free users at the younger ages the individuals who become excessive drinkers find an offset in those who, with the maturity of their intelligence, materially reduce or eliminate their indulgence. On the other hand free users observed in the middle ages possibly include a larger proportion of cases that graduate into the excessive class and a smaller proportion whose habits improve. The outstanding consideration is the instability of this habit in consequence of which a classification based on representations made at the time of application can tell us very little of the influence of a given alcohol consumption on longevity. The general reader must therefore be warned that nothing better than broad inferences concerning the effects of alcohol can be drawn from data based on original applications where the subsequent histories have not been traced and periodical re-classification made on some significant basis.

Experience of Northwestern Mutual

The following experience covers 286,392 policies issued by The Northwestern Mutual Life Insurance Company, 1885 to 1900 inclusive, during which period the policies contained not only a warranty but a so-called "temperance clause" providing that if the insured became habitually intemperate, or so far intemperate as to induce delirium tremens, the company might cancel the policy during the insured's lifetime. From December 1st, 1889, to August 1st, 1900, the restriction was limited to five years. This clause and the knowledge of competing agents as to the company's strictness doubtless explains the relatively large proportion (95 per cent.) classed as abstainers and moderate users.

EXPERIENCE OF THE NORTHWESTERN MUTUAL LIFE INSURANCE CO. 286,392 POLICIES ISSUED 1885-1900. EXPOSED TO 1915. CLASSIFIED BY ANSWERS TO QUESTIONS CONCERNING USE OF ALCOHOLIC BEVERAGES.

By Age at Issue.				By Policy Years.			
Ages at Issue.	Actual Losses.	Per Cent. of Actual to Expected.		Policy Year.	Actual Losses.	Per Cent. of Actual to Expected.	
		Amer.	M.-A.			Amer.	M.-A.
Group "A."							
(168,756 Policies, 15,722 Deaths.)							
15 to 29.....	\$ 7,114,600	50.3	86.4	1st	\$ 1,563,700	43.3	89.1
30 to 39.....	10,506,800	57.0	85.3	2d	1,531,600	50.1	80.1
40 to 49.....	10,890,000	69.0	84.2	3d	1,454,300	49.0	75.7
50 to 59.....	6,990,000	73.5	79.8	4th	1,483,600	51.8	77.8
60 +.....	1,491,200	87.1	90.4	5th	1,489,600	53.0	78.0
				6th+	29,469,800	66.6	85.4
Total.....	\$36,992,600	62.1	84.3				
Group "B."							
(102,268 Policies, 12,239 Deaths.)							
15 to 29.....	\$ 4,942,400	59.4	102.3	1st	\$ 1,506,300	46.1	92.7
30 to 39.....	11,858,300	68.5	102.8	2d	1,418,800	49.3	77.1
40 to 49.....	14,022,700	79.4	97.5	3d	1,445,000	51.0	76.8
50 to 59.....	9,609,000	84.2	91.5	4th	1,599,500	57.5	83.8
60 +.....	1,740,800	78.3	81.7	5th	1,716,700	62.1	88.5
				6th+	34,486,900	81.3	100.9
Total.....	\$42,173,200	74.1	97.2				
Group "C."							
(13,387 Policies, 1,739 Deaths.)							
15 to 29.....	\$ 745,200	66.7	114.6	1st	\$ 171,200	44.0	89.9
30 to 39.....	1,744,400	73.6	110.6	2d	177,700	51.3	81.7
40 to 49.....	1,759,500	91.9	113.3	3d	148,400	43.7	67.2
50 to 59.....	1,200,400	99.6	108.8	4th	231,600	69.6	103.7
60 +.....	154,500	97.6	102.2	5th	221,100	66.9	97.5
				6th+	4,654,000	92.6	117.7
Total.....	\$ 5,604,000	82.8	111.3				
Group "D."							
(1,981 Policies, 369 Deaths.)							
15 to 29.....	\$ 48,500	53.1	91.2	1st	\$ 125,700	115.5	214.9
30 to 39.....	434,000	98.8	149.3	2d	105,200	108.1	158.7
40 to 49.....	609,800	103.0	128.1	3d	80,100	84.7	119.3
50 to 59.....	646,900	106.4	116.1	4th	91,300	98.5	134.2
60 +.....	182,000	143.5	161.1	5th	79,300	85.8	113.4
				6th+	1,439,600	105.0	124.1
Total.....	\$ 1,921,200	103.4	128.9				
Grand total.....	\$86,691,000	69.3	92.4				