

*Temperance* *alcohol*  
*Prophetic*  
*Effects*

EFFECT OF  
TOTAL ABSTINENCE  
ON THE  
DEATH RATE

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## EFFECT OF TOTAL ABSTINENCE ON THE DEATH RATE

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On April 25th, 1895, Mr. Emory McClintock read a paper before the Society "On the Rates of Death Loss Among Total Abstainers and Others," in which he gave some very interesting figures derived from the experience of the Mutual Life Insurance Company of New York. This paper is the first one printed in Volume 4 of the "Papers and Transactions," and those who have not seen it should certainly read it, and to those who have read it, I would advise a careful re-reading, because of the value of the information given. I do not propose at this late date to enter into a discussion of this paper, but will only mention the main facts contained therein.

The mortality experience of the Mutual Life was given up to policy anniversaries in 1889, on the lives of those who, beginning with the year 1875, had stated in their applications that they were total abstainers from the use of alcoholic beverages, and for a somewhat longer period, the experience was given on the lives of those who had stated that they were moderate drinkers of such beverages. The actual loss on both classes of lives was compared with the expected loss according to certain percentages of the American table, which were fully explained in the paper, and which it is not necessary to repeat here. It is sufficient to say that the percentages used were very properly designed to represent the maximum expected loss in the various years during which the policies were in force, allowance being made for the element of medical selection.

Upon the lives of those who had declared themselves to be total abstainers, when applying for their policies, the maximum expected loss was \$5,455,669, and the actual loss was \$4,251,050. Upon those who acknowledged themselves users of alcoholic beverages the maximum expected loss was \$9,829,462, and the actual loss was \$9,469,407. It was very fortunate that these figures were derived from the exper-



ience of the Mutual Life, and were, therefore, of such great magnitude as to free them from any possible accusation of not being large enough to be of any practical value.

The percentage among abstainers of the actual death loss to the expected death loss was 78, while the corresponding percentage among the non-abstainers was 96. Comparing these two percentages, it would appear that the death rate among non-abstainers, as shown by the experience of the Mutual Life, was 23% higher than among abstainers, the difference of 18 being about 23% of 78. If any similar data have been made up, or printed, by any American, or Canadian, life assurance company, large or small, they have not come to my knowledge; but some statistics of English and Scotch life assurance companies have recently been published which seem to fully confirm the conclusion which may fairly be deduced from Mr. McClintock's paper as to the value of total abstinence in tending to lessen the rate of mortality among assured lives.

The experience of the Sceptre Life Assurance Society, Ltd., for the twenty years from 1884 to 1903, inclusive, gives the following figures: For abstainers, expected deaths, 1,440; actual deaths, 792; being 55% of the expected. Non-abstainers, expected deaths, 2,730; actual deaths, 1,880, or 79% of the expected.

The experience of the Scottish Temperance Life Assurance Company, Ltd., for the twenty years from 1883 to 1902, inclusive, gives the following figures: Abstainers, expected deaths, 936; actual deaths, 420, or 45% of the expected. Non-abstainers, expected deaths, 319; actual deaths, 225, or 71% of the expected.

These figures are given in a little book recently published in England entitled, "Alcoholic Beverages—The Comparative Mortality of Abstainers and Non-abstainers," and as the book was sent me by Mr. R. P. Hardy, I have no doubt of the correctness of the figures given therein. No information is given as to what table of mortality was used in the computation of the expected deaths, but as the same table was undoubtedly used for both abstainers and non-abstainers, the comparative percentages of actual deaths to expected deaths as between the two classes of lives, would not be materially changed by the use of any other basis for the computation of the expected deaths. In the case of both companies, the difference in the experience as between abstainers and non-abstainers is remarkable, the percentage of the death rate of actual to expected being about 50% higher with non-abstainers than with the abstainers.

The most reliable and comprehensive experience which has ever been published in Great Britain, however, is that of the United Kingdom Temperance and General Provident Institution, of London, which was shown in detail in a paper read before the Institute of Actuaries on Nov. 30th, 1903, by the Actuary of the Company, Roderick Mackenzie Moore. This paper is entitled "On the Comparative Mortality Among Assured Lives of Abstainers and Non-abstainers from Alcoholic Beverages," and it is certainly interesting reading not only for all actuaries, but also for all others who are interested in vital statistics and social problems.

I shall not undertake to go into the figures in detail, which are given in this paper, but shall merely endeavor to present a summary of some of the facts and figures contained therein. The company in question has always kept very carefully the records of its policies in two sections—total abstainers being included in what is called the Temperance Section, and non-abstainers in what is called the General Section. Policies on the lives of abstainers have been issued since the year 1841, and on the lives of non-abstainers since the year 1849. The figures given in the experience include the entire experience of the office to the end of the year 1901, thus covering over sixty years, in the case of abstainers, and over fifty years, in the case of non-abstainers. The same premiums have always been charged for both sections, the total abstainers receiving any advantage arising from their superior vitality in the form of additional bonus or dividend.

The Temperance Section is composed entirely of total abstainers, and the General Section, of moderate drinkers, selected, it is claimed, with the same care which is exercised by other companies in the selection of their risks. The habits of the assured are looked after annually, and transfers are made from one section to another, in accordance with the changed habits of policyholders as to drink; but as these transfers have been comparatively small in number, and have not affected the experience of the company as between the two sections, I will not consider them in the figures here given. There are two important points to be noted:

1st. That there has been no marked difference in the number of policies in force in the two sections.

2nd. The average amount of the policies in each section has been about the same, so that the comparison of the experience would seem to be as fair a one as could possibly be made.



With this explanation, I will now give the figures on male lives; non-abstainers; whole life policies; "transfers to" excluded:

Total number of years of exposure to risk, all ages	466,943
Expected deaths by OM table.....	8,911
Actual deaths.....	8,947
Per cent. of actual to expected.....	100.4

Male lives; abstainers; whole life policies; "transfers to" excluded:

Total number of years of exposure to risk.....	398,010
Expected deaths by OM table.....	6,899
Actual deaths.....	5,124
Per cent. of actual to expected.....	74.3

The difference between the percentages of actual to expected deaths as between abstainers and non-abstainers is, therefore, 26.1%, and the rate of death among non-abstainers was 35% higher than on the lives of abstainers.

The information given in Mr. Moore's paper produced a lengthy discussion among the members of the Institute, and a few of the speakers made some effort to break the force of the conclusions which would naturally be arrived at from the figures here given. This effort was natural, for the showing here made seemed almost like a condemnation of the habits of a majority of English men, and, possibly, also a majority of English women. In my judgment, however, these efforts were not successful. One of the suggestions made was, that the lower mortality among abstainers might have arisen from their being a better class of lives in other respects than non-abstainers; but it was distinctly stated by Mr. Moore, in his paper, and by Mr. T. P. Whittaker, M. P.,—who, as the Chairman and Managing Director of the Company, was present as a visitor, and took part in the discussion—that there was practically no difference whatever between the two classes of lives in the General Section and in the Temperance Section, except as regards their use of alcoholic beverages. Those in the Temperance Section were total abstainers, and those in the General Section, moderate drinkers, selected with the same care as is exercised in other life assurance companies. This fact is proved by the experience in the General Section, which shows approximately the same rate of mor-

tality as the OM table, which is based upon the experience of all British Companies for the thirty years between 1863 and 1893. Compared with the older experience, as shown by the HM table, the death rate in the General Section shows a reduction of about 5½%, according to the figures given by Mr. Moore.

Instead of the lives in the Temperance Section being more carefully selected than those in the General Section, it was suggested in the discussion that the reverse was probably the case; for physical defects, or impairments, are always more likely to be overlooked by medical examiners in the case of total abstainers than with moderate drinkers. It seems to me, therefore, that Messrs. Manly and Hardy, and others who took part in the discussion, were correct in their statements that the figures derived from the long and extensive experience of the United Kingdom Temperance and General Provident Institution were conclusive in their demonstration that the effect of total abstinence from alcoholic beverages is beneficial to health, and conducive to longevity.

There are, however, many other testimonies to the effect that the use of alcoholic stimulants produces an increase in the rate of mortality. So destructive has been their effect upon the lives of the North American Indians, that under United States law it is a penal offense to sell alcoholic beverages to an Indian. The mortality among Africans and South Sea Islanders has also been so increased by the use of alcohol, that simply as a matter of humanity the civilized nations of the world have united in their efforts to stop the sale of liquor in the Congo and in certain islands of the Pacific. While it is doubtless true that the deleterious effects of alcoholic beverages are more apparent among the black men and red men than among white men, yet, as we have the assurance that all nations are made of the same blood, what is injurious to one cannot be beneficial to another.

As further proof of the injurious effect of alcoholic beverages, as shown in the death rate, I would refer to the statistics which have been published from time to time, showing the percentages of mortality in the various occupations. These statistics have invariably shown a higher death rate among those engaged in the liquor business, from brewers down to bartenders, than among those engaged in other occupations, except such as are clearly defined as specially hazardous. The higher death rate among liquor dealers is so universally recognized by life assurance companies that a number of them will not issue policies, even on the lives of the richest brewers, upon any terms, and not one of the companies, to my knowledge, admits liquor dealers



upon as advantageous conditions as those engaged in other ordinary occupations.

As an example of the restrictions in this respect, I would quote the rules as given in a circular sent to the agency force of a prominent United States company. This circular reads almost like a temperance document, and yet it is simply sent out as a matter of business, because statistics show that owing to what might be called the very atmosphere by which liquor dealers are surrounded, the mortality among them is higher than among those engaged in occupations which do not involve the handling of alcoholic beverages. This circular reads as follows:

"The number of applications received from persons engaged in the sale or manufacture of liquor has increased so rapidly that we find it necessary to call the attention to the rule on page 345 of the 'Blue Book' regarding this class of business, in order that unnecessary declinations may be avoided. This rule is as follows:

"Bartenders. ....	Not Taken.
"Saloon keepers, generally, not taken, but best of this class may be accepted on 10 or 15 Year Endowments only.	
"Commercial Travelers (Salesmen).....	\$5 per thousand extra.
"Brewers (unless seldom at their breweries)	\$5 per thousand extra.
"Employees in breweries.....	\$5 per thousand extra.
"Wholesale dealers, if apparently unaffected by their business. ....	Free.
"Restaurant keepers and waiters selling liquor. ....	\$5 per thousand extra.

"(In this whole class the habits, past and present, and appearance will be carefully considered.)

"Please note that bartenders are *positively not taken*, and saloon keepers *tending bar occasionally* are therefore unacceptable. Only saloon keepers of the best class, very temperate in their habits, not tending bar, and enjoying the best moral surroundings which the business permits, will be taken at all, and only on 10 and 15 Year Endowment G. C. V. policies. It is useless to present cases not falling within these limits, as not only will the applications be declined, but

the cost of medical examination may be charged against the agents for their failure to observe the rule.

"It is also noted that there is a growing tendency to present the applications of brewery employees for acceptance without extra premium. In order that there may be no misunderstanding on this subject, agents are hereby informed that the only persons employed directly in connection with breweries who will be accepted without extra premium are the financial officers or officials seldom at the breweries, and employees such as book-keepers, etc., whose work is performed in a building apart from the brewery proper, or the place where the product is stored or kept in bulk.

"General store-keepers everywhere, handling liquor at retail as part of their business, if taken at all, will hereafter be limited to dividend accumulation Endowment policies with not more than 20 years to run, but no policies with return of premium or with the Indemnity or Mortuary dividend feature will be issued to this class of applicants. This limitation is made necessary by the very excessive rate of mortality found to exist among persons so employed."

In connection with the rules and practice of companies, it may be well to state here that an applicant for assurance is never refused because he is a total abstainer, while others are being constantly rejected because of their excessive indulgence in alcoholic beverages, as shown in the results of medical examinations, or the reports made by inspectors of risks under consideration. A careful investigation is made of every applicant's drinking habits, because of the unquestionable fact that intemperance is one of the chief causes of a high rate of mortality, and a man known to drink to excess can rarely obtain a policy in any company, even under the most disadvantageous conditions.

By many, however, who acknowledge and condemn the evils of intemperance, it has been generally supposed that what is called a moderate use of alcoholic stimulants is not only harmless, but even beneficial. It is largely for their benefit that this paper has been written, for while the primary service to be performed by Societies of Actuaries is somewhat technical in its nature, and, therefore, uninteresting to outsiders, yet it is a happy combination when statistics can not only furnish valuable information to life assurance companies and experts, but also at the same time teach a lesson which may be of material value to the general public. I, therefore, appreciate the words of Mr. R. P. Hardy, when, in discussing the paper giving the experience of the London company, he said he considered that Mr.



Moore "was highly privileged that, through the instrumentality of the Institute, he was the means of communicating to the world an important series of authentic facts in aid of the solution of a social problem of indisputable gravity."

The question of indulgence in alcoholic beverages is one of world-wide interest, and an authority as eminent as that of the "Grand Old Man" of England, William E. Gladstone, has declared that intemperance has been productive of more evil than war, pestilence and famine combined. To lessen this evil, even in the slightest degree, is, in my judgment, worthy of the efforts of an actuary, and I frankly confess that this object has not been lost sight of in the preparation of this paper.

Drunkenness is universally condemned and deplored, but all drunkards began as moderate drinkers, and the smaller the number of moderate drinkers, the smaller will be the number of drunkards whose habits render it impossible for them to obtain that protection for their families in case of their death which life assurance companies would, otherwise, be glad and willing to furnish. A total abstainer can never become a drunkard, and I believe that it is universally admitted that a drunkard can never be reformed, except by becoming a total abstainer.

If, therefore, it can be proved that total abstainers show a death rate which is materially lower than that experienced among the most select body of moderate drinkers, in regard to which statistics are obtainable, I submit that total abstainers have the best of the argument as regards the use of alcoholic beverages; and, considering the care with which the risks of a life assurance company are selected, intemperate applicants being rigidly excluded, I contend, in conclusion, that the facts mentioned in this paper show conclusively that the effect of total abstinence is to lower the death rate, and increase the average duration of human life.