SICKNESS AND THE DEPRESSION[1]

A PRELIMINARY REPORT UPON A SURVEY OF WAGE-EARNING FAMILIES IN TEN CITIES[2]

by G. ST.J. PERROTT AND SELWYN D. COLLINS

PRELIMINARY reports of a survey made early in 1933 by the United States Public Health Service in cooperation with the Milbank Memorial Fund have indicated a higher rate of disabling illness among families that had been reduced to poverty during the economic depression than among families whose financial condition was not so affected. The findings of the preliminary reports for some of the cities are confirmed by the summarized results for all ten cities presented in this paper. In addition, the morbidity rate at different ages is compared for persons with contrasted economic experience and the illnesses are classified into broad diagnosis groups for children and adults.[3]

The sample population in the ten cities comprised 40,163

[1]From the Office of Statistical Investigations, United States Public Health Service, and the Division of Research, Milbank Memorial Fund.

[2]Baltimore, Md.; Birmingham, Ala.; Brooklyn, N. Y.; Cleveland, Ohio; Detroit, Mich.; Greenville, S. C.; Morgantown, W. Va.; New York, N. Y.; Pittsburgh, Pa.; Syracuse, N. Y.

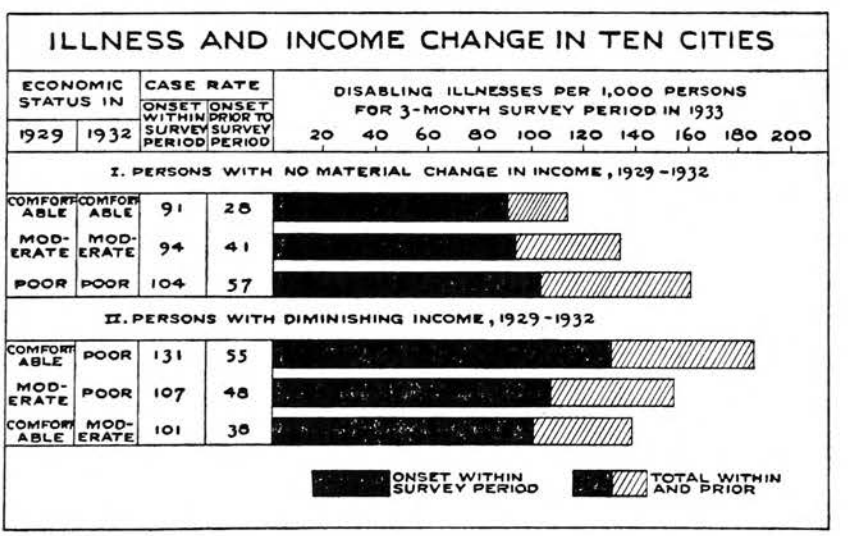
[3]The reader is referred to previous papers for details as to the method and scope of the survey:

Perrott, G. St.J. and Collins, Selwyn D.: Sickness and the Depression. The Milbank Memorial Fund *Quarterly Bulletin*, October, 1933, xi, No. 4, pp. 281–298; January, 1934, xii, No. 1, pp. 28–34. *American Journal of Public Health*, February, 1934, xxiv, No. 2, pp. 101–107. Perrott, G. St.J.; Collins, Selwyn D.; and Sydenstricker, Edgar: Sickness and the Economic Depression, *Public Health Reports*, United States Public Health Service, October 13, 1933, 48, No. 41. Collins, Selwyn D. and Perrott, G. St.J.: The Economic Depression and Sickness, *Journal of the American Statistical Association*, March, 1934, Supplement xxix, pp. 47–51. Perrott, G. St.J.; Sydenstricker, Edgar; and Collins, Selwyn D.: Medical Care During the Depression. Milbank Memorial Fund *Quarterly*, April, 1934, xii, No. 2, pp. 99–114. Sydenstricker, Edgar and Perrott, G. St.J.: How Unemployment Affects Illness and Hospital Care. *The Modern Hospital*, March, 1934, xlii, No. 3, pp. 41–44.

individuals in 9,130 families for which the data were sufficiently complete for computing the actual income for each of the four years from 1929 to 1932. The population was largely of the wage-earning class, a considerable proportion of which had experienced loss of income due to unemployment and wage reductions. In 1929, 12 per cent of the persons surveyed were in families with an annual per capita income of $149 or less; by 1932, 46 per cent were in this class. Considering the upper income brackets, in 1929, 40 per cent were in families with an annual per capita income of $425 or over; by 1932 this figure had decreased to 13 per cent.

In Figure 1 the incidence of all types of disabling illness, onset within and prior to the survey period, is shown among groups of the population classified according to economic history during the depression. The *survey period* refers to the three months prior to the enumerator's visit for which illness data were recorded. The income classification is the same as

Figure 1. Disabling illness during a three-months period in the early spring of 1933 in wage-earning families classified according to per capita income and change in per capita income, 1929–1932, in ten localities.[1]

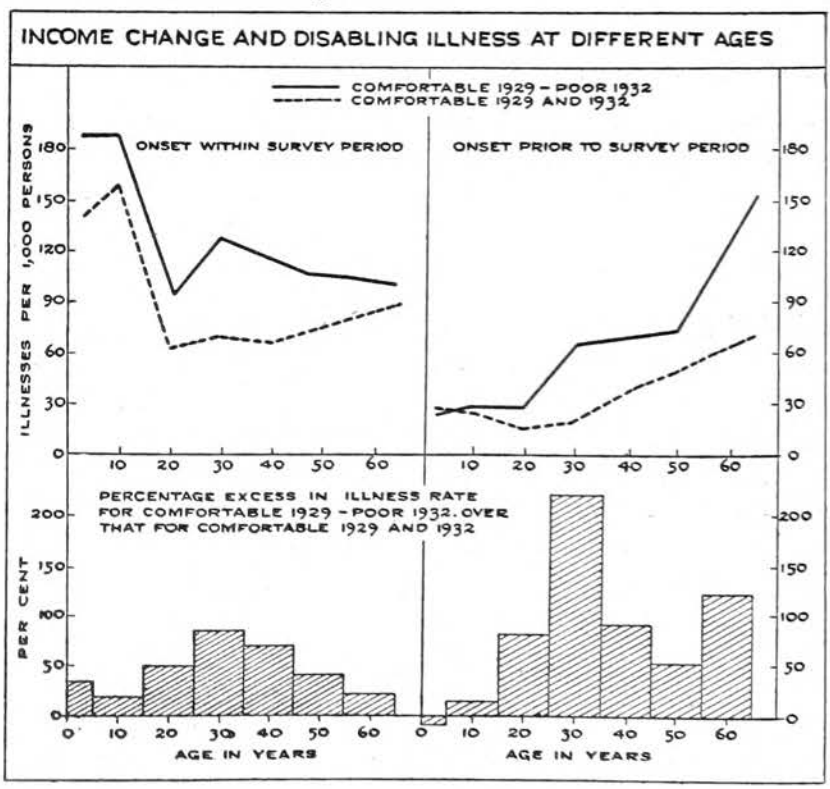


[1]Population observed. See footnote to Table 1.

has been used in previous papers, namely: "comfortable" $425 and over annual per capita income; "moderate" $150–$424 annual per capita income; "poor" under $150 annual per capita income.

In agreement with previous reports, the highest incidence of disabling illness appears in the group which suffered the greatest loss of income during the depression, namely, the group "comfortable in 1929 and poor in 1932." This group showed a rate, adjusted for age, of disabling illness, onset within and prior to the survey period, of 186 cases per 1,000 persons, which was 56 per cent higher than the rate (119 per 1,000 persons)

Figure 2. Disabling illness for a three-months period at specific ages in ten surveyed cities in two groups of wage-earning families, one which suffered a large decrease in income between 1929 and 1932 and the other which maintained unchanged income.



of their more fortunate neighbors who had remained in comfortable circumstances for the entire period.

In the groups of families that experienced a reduction in income, an increased illness rate is associated with increasing amount of income loss. In the group experiencing no material change in economic status, the highest illness rate is exhibited

Table 1. Disabling illness during a three-months period in the early spring of 1933, classified as (1) respiratory and (2) diseases other than respiratory and communicable, among children and adults in wage-earning families classified according to change in per capita income, 1929–1932, in ten cities.[1]

Economic Status		Case Rate per 1,000 Persons[2]			
		Onset Within		Onset Prior	
1929	1932	Under 15	15 and Over	Under 15	15 and Over
RESPIRATORY DISEASES					
Comf.	Mod.	76	44	6	8
Mod.	Poor	74	57	6	10
Comf.	Poor	103	71	14	12
Comf.	Comf.	74	41	7	5
Mod.	Mod.	70	48	9	8
Poor	Poor	67	67	6	14
DISEASES OTHER THAN RESPIRATORY AND COMMUNICABLE					
Comf.	Mod.	25	37	9	46
Mod.	Poor	26	40	14	62
Comf.	Poor	23	42	18	69
Comf.	Comf.	25	33	15	36
Mod.	Mod.	23	34	12	51
Poor	Poor	17	47	17	82

[1]

Population Observed:	Children	Adults	Total
Comf.-Mod.	2,021	5,889	7,910
Mod.-Poor	4,835	5,847	10,682
Comf.-Poor	1,107	2,096	3,203
Comf.-Comf.	683	4,212	4,895
Mod.-Mod.	2,616	5,630	8,246
Poor-Poor	2,081	2,408	4,489

[2]Rates are adjusted for differences in age distribution within the groups.

by the group which was "poor" for the four years and the lowest illness rate by the group which was "comfortable".

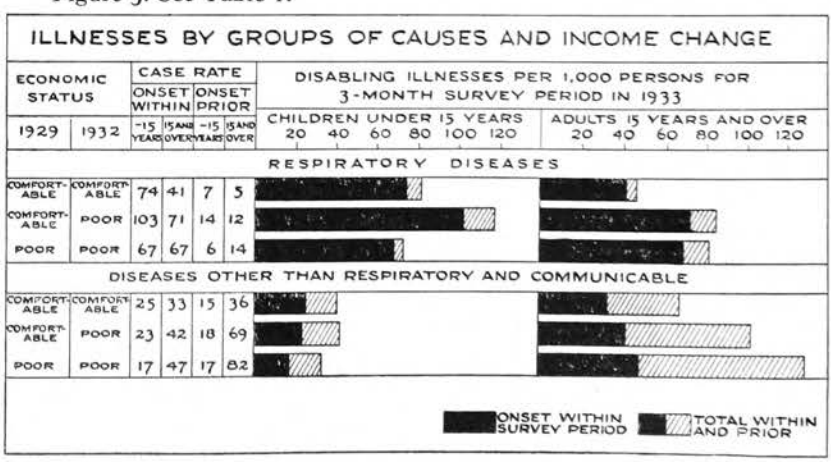
These findings are true not only for the groups of cities previously reported upon as well as for the entire population surveyed, but for each city.

For every age class the groups "comfortable in 1929 and poor in 1932" exhibited a higher rate of disabling illness, onset within the survey period, than the group that had remained "comfortable" for the entire four years. (Fig. 2.) The same relation is shown for illnesses having onset prior to the survey period except among the very young children (under 5 years).

The increase, if it may be so termed, in the illness rate in families whose income dropped over the rate in families whose income did not change materially was greater among adults than among children. This was shown both for illnesses which began during the survey period (chiefly acute) and for illnesses with onset prior to the period (chiefly chronic). The greatest excess appeared in the ages 25–34 years for both groups of illnesses and among persons 55 years of age and over for illnesses with onset prior to the survey period.

Table 1 and Figure 3 show disabling illnesses divided into

Figure 3. See Table 1.



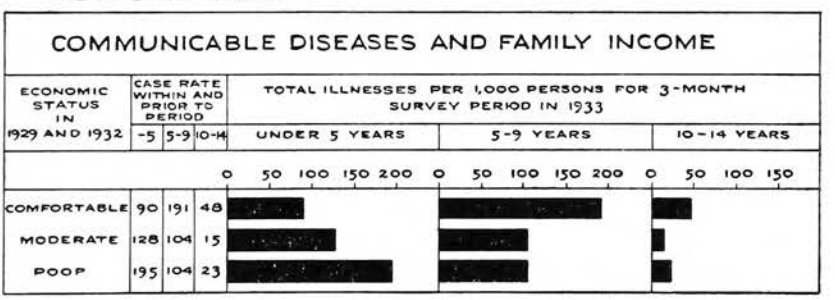
two broad diagnosis groups: (1) respiratory, and (2) all other diseases except communicable; each class is given for children (under 15 years) and adults (15 years of age and over).

For *adults*, the same sequences with economic status are evident for both diagnosis groups as appeared for all types of illness (Fig. 1). In the respiratory group, the greatest differences appear in the illnesses having onset within the survey period; in the non-respiratory group the illnesses with onset prior to the period, largely chronic diseases, show the greatest variation with economic history.

For *children*, the highest rate of respiratory illness is shown by the group which had suffered the greatest economic reverses (comfortable in 1929—poor in 1932). This group of children had a disabling illness rate, onset within and prior to the period, of 117 as compared with 81 per 1,000 for the group which was in comfortable circumstances for the entire four years. Considering diseases other than respiratory and communicable, very little difference in illness rate is evident among children in the different economic groups.

The communicable diseases of childhood, however, show an entirely different kind of association with economic status from that which appeared for other types of illness. In order to analyze this new relationship, a more detailed tabulation was made of the four cities in which an appreciable number of cases of these communicable diseases was prevalent. (Fig. 4

Figure 4. See Table 2.



Economic Status		Case Rate per 1,000 Persons			Population Observed		
1929	1932	Under 5 years	5–9 years	10–14 years	Under 5 years	5–9 years	10–14 years
Comf.	Comf.	90	191	48	78	89	105
Comf.	Mod.	114	186	62	323	317	258
Comf.	Poor	92	152	63	239	205	144
Mod.	Mod.	128	104	15	149	327	401
Mod.	Poor	158	118	35	392	689	666
Poor	Poor	195	104	23	159	336	384

Table 2. Communicable diseases among children in the early spring of 1933 in wage-earning families classified according to change in per capita income, 1929–1932, in Birmingham, Cleveland, Detroit and New York.

and Table 2.) The extremely interesting fact appears that for the young children (under 5 years) the highest rate of infectious disease is exhibited by the "chronic poor" and the lowest rates by the three groups that were comfortable in 1929. Economic experience during the depression does not appear to be correlated with the illness rate for these diseases. Among the children in the ages 5–9 and 10–14 years, the sequence is reversed—the comfortable groups having the highest rates and the poor classes the lowest.

Evidently the children of the poor contract the communicable diseases at an earlier age, on the average, than the children of those in better circumstances. Thus, when a group of "poor" children arrive at school age, a relatively high percentage of them have already had the communicable diseases. The children from families in better circumstances, being less exposed to cases of infectious disease in early childhood, show a relatively high rate in the early school ages.

The "depression-poor" had apparently not been in straitened circumstances for a sufficient time to acquire the living habits or other environmental conditions of the chronically poor that are responsible for a high incidence of communicable diseases at the earliest ages.