

CAUSAL AND SELECTIVE FACTORS IN SICKNESS

To what extent are selective factors involved in the higher sickness rates among the "depression poor"? This question is discussed in a joint article on "Causal and Selective Factors in Sickness," which appears as a chapter in SOCIAL CHANGES DURING DEPRESSION AND RECOVERY, edited by Professor William F. Ogburn, of the University of Chicago.¹ The authors, G. St. J. Perrott and Edgar Sydenstricker, present an analysis of the so-called "Health and Depression" studies carried on by the Office of Statistical Investigations of the United States Public Health Service and the Division of Research of the Milbank Memorial Fund, from the point of view of the relative importance of the causal and selective factors involved.

These studies are based on a survey of 12,000 wage-earning families in ten localities made early in 1933. They indicated a relatively high rate of disabling illness among families hardest hit by the depression and in particular among those who were on relief in 1932. Factors contributing to this high illness rate among the new poor may have been (1) causal, reduced standards of living affecting the health of these families unfavorably; or they may have been (2) selective, for example, (a) sickly wage-earners, unemployed because of illness, were concentrated among the new poor, (b) a tendency to sickliness may be associated with inability to succeed during a period of increased competition for jobs, even though sickness itself is not the direct cause of unemployment. The authors believe that the causal factor was more important because (1) the excess in illness rates among the unemployed was found among children as well as adults; (2) the highest illness rate was exhibited by families that suffered the greatest loss of income; and (3) when all families were excluded in which the wage-

¹ SOCIAL CHANGES DURING DEPRESSION AND RECOVERY. Edited by William F. Ogburn. Chicago, University of Chicago Press, 1935.

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earner at any time between 1929 and 1932 was unemployed because of illness, the same excess in illness rate was observed in the group that had fallen from comfort to poverty during the depression.

In commenting upon these findings, the authors suggest that it seems reasonable to suppose that a reduced standard of living, including crowded housing conditions, lack of food, clothing, and medical care which accompany loss of income, had a part in causing the higher sickness rate in 1935. However, the authors point out that two other factors may have played a part. To quote from the paper:

(1) Unemployment of wage-earners due to sickness probably contributed to the loss in income of certain families; these persons may have been concentrated in the group that suffered economic reverses during the depression and have been responsible for at least a part of the high illness-rate in this group. However, analysis of the data shows this to be a relatively unimportant factor. Individuals unemployed due to sickness were not concentrated among the new poor (Table I) and furthermore the same excess in sickness rates was observed in this group when all families were excluded in which there was unemployment due to sickness at any time between 1929 and 1932 (prior to the survey period).

(2) The depression may have been a great sifting process, separating the fit from the unfit. In spite of innumerable exceptions, the men who kept their jobs were, on the average, the more vigorous, capable, and intelligent ones. Moreover, with many exceptions, it is true that those who lost their jobs were less efficient than those who remained employed. This inefficiency may have been exhibited in many ways distinct from inability to compete in the economic struggle-perhaps a diathesis or tendency toward sickliness existed among these families as a concomitant of the economic inefficiency of the wageearner. This explanation of the higher sickness-rates among the new poor does not assume sickness, per se, as a cause of unemployment but postulates an inherent inferiority of which unemployment was one manifestation and ill health another. According to this hypothesis, the new poor would have exhibited a high illness-rate even in 1929 (if they could have been singled out for observation), and their lowered standard of living during the depression was not the prime cause of their high illness-rate.

The writers admit the possibility that selection played a part

in bringing about the situation observed in 1933, but it does not seem probable that selection of the less fit by the depressionscreen is the whole story. Undoubtedly, those who became unemployed during the depression were, on the average, the least well equipped to compete in the keen struggle for jobs. For example (Table 1), when we compare the new poor in the surveyed group with those who remained comfortable throughout the depression, we find they had fewer household heads with high-school or college education, fewer in the white-collar occupations in 1929, that they lived in more crowded living quarters even in 1929, and exhibited a higher birth rate. Some of these findings appear to indicate that families of certain types were least successful in weathering the depression. However, only a rabid geneticist would believe that a theory of selection contains the sole explanation of the results of the present survey. As a matter of fact, when illness-rates

Table I. Characteristics of white wage-earning families classified according to per capita income change, 1929-1932-five cities surveyed early in 1933.1

	Comfortable in 1929 and 1932	Comfortable 1929—Poor, 1932	Poor in 1929 and 1932
Percentage of all families:			
With full-time workers, 1929	89.4	88.3	33.I
With full-time workers, 1932	72.7	7.0	19.7
With no employed workers, 1932	0.7	36.8	34.6
With chief wage-earner a white-collar worker		-	
in 1929	33.4	9.6	13.0
On relief, 1929	0.0	0.63	14.7
On relief, 1932	0.73	55.9	55.9
With household head native of native parents	44.3	43.3	26.3
With household head having high-school or			
college education	27.9	19.4	7.2
With unemployment due to illness, 1931–1932	6.3	6.0	9.1
Persons per family, 1933	2.8	4.0	6.1
Persons per room, 1929	0.54	0.78	I.2I
Persons per room, 1932	0.55	0.93	I.27
Annual birth-rate ² per 1,000 married women,			
aged 15-44 years, 1929-1932	107	133	178
Disabling illness per 1,000 persons for three-			
month period	119	185	153

¹ Baltimore, Cleveland, Detroit, Pittsburgh, and Syracuse. ² Total family income was used in classifying families for birth-rate tabulation: "comfortable" indicates annual family income of \$2,000 and over; "poor," under

\$1,200. ⁹ Income classifications are based on earnings for the year; hence a few families that went on relief late in 1929 or 1932 are still classed as comfortable.

are made specific for age, sex, race, education, occupation, and relief status, the association between drop in income and high illness-rate is still evident.

A study now being made of the death-rate among families who became unemployed during the depression will throw further light on the question, because it is possible to obtain information on deaths for a number of years prior to the canvass, which is not feasible in a sickness survey. Hence, *trends* in the death-rate from 1929 to the present time can be studied for groups of families that had various types of economic history during the depression. Preliminary results indicate a rise in the death-rate between 1929 and 1933 among families in which the wage-earner became unemployed in this period.

The facts that the excess in illness-rates appears among children as well as adults and that the highest illness-rates are exhibited by families that had dropped from the highest level in 1929 appear to point to a definite causal relation between lowered standard of living and high illness-rate. But whatever the cause, the depression has presented to society for support a group of some 20 million persons in the United States who are now on relief rolls, among whom sickness is probably more prevalent than in the rest of the population. It must be recognized that medical care and preventive services for these persons are a necessity of life as well as food, clothing, and shelter. These necessities must be made available to all if the health of the wage-earning population is to be maintained.

Edgar Sydenstricker

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VACCINATION AGAINST TUBERCULOSIS

PROBABLY no research in tuberculosis being pursued at the present time is being watched with more interest than the study of the B C G vaccination introduced by Calmette in France. Since the days of Pasteur's great achievements in prophylactic immunization public attention has always been held by this type of medical progress. Also, in spite of the decline in tuberculosis mortality, there is still a substantial number of deaths from the disease among infants and small children, and vaccination holds forth the hope of protection for those living in tuberculous homes.