URBAN AND RURAL SUICIDE

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THE frequency of suicide differs between communities, countries, and historical periods. Though, in individuals, personal crises and peculiarities of personality structure are important in the causation of suicide, the differences in frequency referred to above are related to differing religious and social attitudes toward suicide and particularly to the degree of the individual's integration into a stable social group. This last influence, it has been suggested, is chiefly responsible for the difference between the suicidal tendencies of urban and rural areas.

It has long been known that usually suicide is proportionately more frequent in towns than in the country, and that this is so in many parts of the world (Durkheim, 1897; Sainsbury, 1955). In the literature which has been written on this aspect of suicide, however, the criterion of what constitutes an urban or a rural community appears to have been a purely administrative one. For example, the County Reports of the 1951 census in Great Britain sometimes include, among urban districts, communities of 1,000–2,000 persons, and among rural districts communities of 2,000–3,000 persons. This classification is unsatisfactory and distorts comparisons of urban and rural suicides based upon it.

It is therefore thought that closer attention might profitably be given to the differences between urban and rural suicides by abandoning the administrative classification in favour of one which gives a truer picture of the kinds of community in which the suicides had lived. For this purpose the word urban is here used to denote communities of 1,000 or more persons while communities of fewer than 1,000 persons are considered to be rural.

From the coroners' records of the suicides which occurred throughout Wales in the five years 1951–1955 information was extracted regarding the sex, address, occupation, and time of death, and this information is presented here against the suicides' setting in an urban or rural environment. The tables which follow show only crude rates, for standardized rates cannot be calculated since the ages of the county populations are known only for the Registrar General's designation of urban and rural areas. It is believed that any resulting inaccuracy of the comparative picture is only slight and is more than compensated by a more truthful and descriptive representation of the kind of community indicated by the words urban and rural.

URBAN AND RURAL SUICIDE RATES IN THE WELSH COUNTIES

Among the 2,173,560 inhabitants of the twelve Welsh counties (1951 census, excluding Monmouthshire), there occurred 881 suicides during the five years 1951–1955, an average annual suicide rate of 8·11 per 100,000 population. The urban suicide rate was 9·84 and the rural suicide rate 4·75.

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These figures conceal great variations in the frequency of both urban and rural suicide between the counties, as Table I shows:

TABLE I

Average Annual Suicide Rates Per 100,000 *of Population for Urban and Rural Areas of the Welsh Counties, 1951–1955*

	Urban Rates			Rural Rates		
	Males	Females	Persons	Males	Females	Persons
Anglesey	10·96	1·93	6·16	12·99	1·27	7·06
Brecknockshire ..	21·35	9·66	15·55	10·91	5·1	8·05
Caernarvonshire	11·92	4·06	7·57	8·59	0	4·16
Cardiganshire ..	45·26	14·85	28·35	11·42	3·18	7·15
Carmarthenshire	17·7	9·19	13·24	10·0	4·31	7·12
Denbighshire ..	20·09	6·57	12·76	5·23	2·15	3·68
Flintshire ..	13·76	10·46	12·00	5·31	1·66	3·53
Glamorganshire ..	11·69	6·29	8·92	2·55	1·0	1·78
Merionethshire ..	21·52	8·62	14·74	11·13	1·79	6·71
Montgomeryshire	14·02	6·39	9·99	11·16	2·93	7·15
Pembrokeshire ..	12·11	7·99	10·0	11·86	3·42	7·66
Radnorshire ..	19·97	11·99	15·77	11·26	3·05	7·32

Urban suicide rates ranged from 28·35 per 100,000 population in Cardiganshire to 6·16 in Anglesey, and rural rates from 8·05 in Brecknockshire to 1·78 in Glamorganshire. In all counties with one exception, Anglesey, the urban suicide rate was higher for both sexes than was the rural rate.

The greater frequency of urban suicide may be explained by differences in the attitudes and social organization of urban and rural communities. In the country people are part of an ordered integrated society; they are knit into a stable parochial life and social relationships are firmer than in the towns. The need to conform and the benefits of conformity are greater. Those who live in the country tend to be satisfied with the interests available to them while those who are dissatisfied drift into the towns.

Though the social organization of rural life is usually defence against suicide, local conditions have been known to modify this. Dublin and Bunzel (1933) reported that in the Irish Free State from 1923 to 1928 the rural suicide rate was about 10 per cent. higher than the urban suicide rate. Schroeder and Beegle (1956) found that in Michigan the male suicide rate was higher in the country than in the towns while the female suicide rate was nearly equal in the two kinds of community. It was suggested that the usual urban : rural proportions of suicide were reversed in Michigan because many of the country dwellers had little part in the rural life; two-thirds of them were "fringe dwellers" working in urban occupations and having urban attitudes and tastes.

Without access to sociological data it cannot be known whether the reversal of the usual urban : rural proportions of suicides which was found among males in Anglesey is accountable in the same way, whether a conflict of urban and rural values and the disruptive influence, upon a hitherto insular community, of growing industry and commerce were responsible in this county for the highest rural male suicide rate in Wales. Certainly Glamorganshire, whose rural areas enjoyed the lowest male and the second lowest female suicide rate of any community in any county in Wales, showed no evidence that close proximity to industry and to densely populated urban areas has an adverse

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effect upon rural suicide. The comparison is not, however, a proper one, for in Glamorganshire the rural areas have experienced during the last century or more a gradual development of industrialism in their midst, while in Anglesey the impact of urban standards and ways of living has been more immediate.

Before continuing this examination of urban and rural suicides a digression will be made to comment briefly on the differences which Table I shows between the suicidal propensities of the different counties and of the sexes. Suicide rates differ between countries and between different districts of a single city (Cavan, 1928; Sainsbury, 1955). It is therefore no matter for surprise that they should differ also between the counties in Wales. What is, however, remarkable is the great range through which the rates vary in this small country. These differences in suicide rates are not explicable by differences in the age composition of the county populations, for they remain much the same when the rates are standardized. It is outside the scope of this paper to discuss the significance of this. One might conjecture, on the basis of Sainsbury's work, why these differences exist between the counties, but the question which they pose deserves detailed correlation of medical and sociological data for contrasting counties, not merely with the aim of reducing the number of suicides, but to assess and reduce the degree of mental ill health which high suicides rates imply.

The preponderance of the number of male over the number of female suicides in every county in Wales agrees with that found in England and Wales as a whole (Stengel, 1952), but the wide difference between the suicide rates of the sexes in, for example, Anglesey (urban rates=10·96 male : 1·93 female; rural rates=12·99 male : 1·27 female) emphasizes the question why this difference between the sexes should exist. As long ago as 1897 Durkheim called suicide "an essentially masculine phenomenon". The male suicide rate is known to be more variable in response to stresses than is the female suicide rate (Sainsbury, 1955) and may reflect social conditions against whose effects women are more protected by the more circumscribed domestic functions which they perform. The difference between such counties as Anglesey and Flintshire in their male : female suicide ratio suggests a need for sociological research to test this hypothesis and to identify those conditions which foster or discourage suicidal tendencies in one sex more than in the other.

The Size of the Community and Suicide

The line of demarcation between rural and urban communities adopted in this study (a population of 1,000 persons) marks also the division between a suicide rate of 4·75 per 100,000 and one of 9·84. It is clearly unlikely that this enormous increase in suicidal tendency should occur precisely at this population level. The question then forces itself on one's attention whether the general rural and urban rates conceal an increasing suicidal trend in progressively larger communities. There are degrees of urbanization and rurality, and direct relationships have been found elsewhere between the degree of urbanization and frequency of suicide. Suicide rates in the U.S.A. are higher in the larger towns than in the smaller (Henry and Short, 1957; Dublin and Bunzel, 1933; Cavan, 1928).

Similar results were not, however, found among the towns in this present study, consequently numbers of suicides are not given here for sizes of towns. One interesting fact which did emerge was that the change of suicide rate was very marked at about the 1,000 of population level. The rural suicide rate was 4·75 while for towns whose population was 1,000–2,000 persons the rate was

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8·53. It was not possible to calculate suicide rates for different communities of smaller sizes than 1,000 persons, for the sizes of the rural communities in which suicides occurred were indefinite. The address of a rural suicide, recorded at the inquest, was merely the postal address and might have related the suicide to the nearest hamlet though he lived alone a mile away.

Suicide and Density of Population

Though rural suicides could not always be placed in communities of definite sizes, as urban suicides could be, a crude measure of the degree of physical contiguity in country districts is given by the densities of population per acre recorded by the County Census Reports of 1951, and the rural suicide rates of the counties may be compared with these. Suicide rates for the rural areas of the different counties are shown with the densities of population in Table II.

TABLE II

Average Annual Rural Suicide Rates Per 100,000 Population, and Density of Population, the Welsh Counties, 1951–1955

	Rural Suicide Rates			Persons Per Acre in Rural Districts
	Males	Females	Persons	
Anglesey	12·99	1·27	7·06	0·2
Brecknockshire	10·91	5·10	8·05	0·1
Caernarvonshire	8·59	0	4·16	0·2
Cardiganshire	11·42	3·18	7·15	0·1
Carmarthenshire	10·00	4·31	7·12	0·2
Denbighshire	5·23	2·15	3·68	0·2
Flintshire	5·31	1·66	3·53	0·5
Glamorganshire	2·55	1·0	1·78	0·7
Merionethshire	11·13	1·79	6·71	0·1
Montgomeryshire	11·16	2·93	7·15	0·1
Pembrokeshire	11·86	3·42	7·66	0·1
Radnorshire	11·26	3·05	7·32	0·05

This Table shows that the counties with the most sparsely populated rural areas tended to have the highest rural suicide rates. Thus, six counties with a rural population of not more than 0·1 persons per acre all had rural suicide rates of more than 6 per 100,000, while the two counties with the most densely populated rural areas (Flintshire and Glamorganshire) had rural suicide rates of only 3·53 and 1·78. There was a high negative correlation between rural male suicide rates and density of rural population ($r = -0·83$).

The relationship between density of rural population and the rural suicide rates of the two sexes is illustrated in the histogram (Fig. 1).

There appears to be a general though irregular tendency towards an association between female suicide rates and density of population, while the rural male suicide rates show an almost constant decline with increasing density of rural population in all counties except Anglesey. It will be remembered that this county had another peculiarity: it was the only county whose rural suicide rate exceeded its urban rate.

What the reason may be for this relationship between rural suicide rates and density of rural population it is possible only to speculate at present. In isolated communities the paucity of social contacts may be responsible for higher suicide rates, or there may be some other influence such as comparatively unprofitable farming land which may cause both sparsity of population and a

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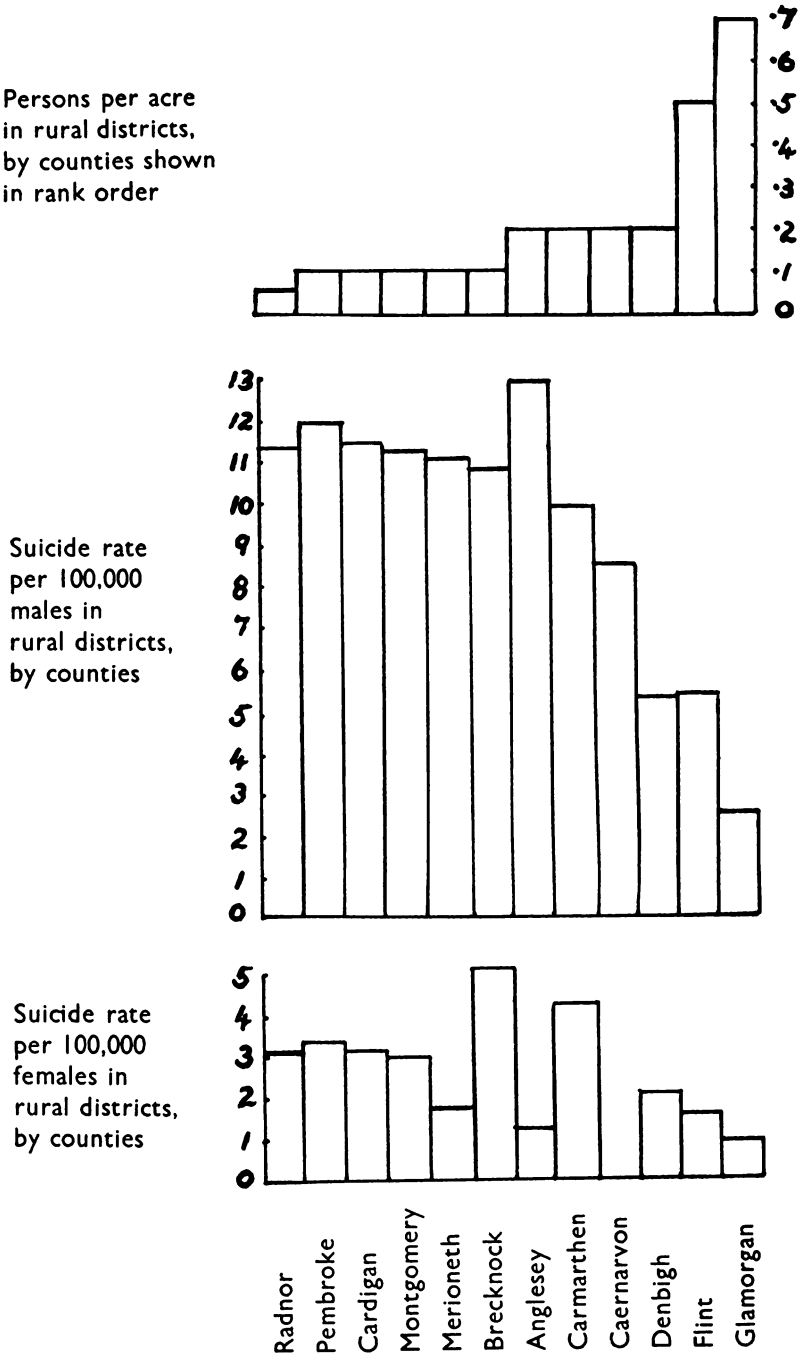


FIG. 1

more precarious livelihood, and consequent greater hardship and stress. Whatever the cause may be, women are apparently less affected by it than are men. As Sainsbury (1955) has remarked, women have a certain immunity to stresses

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by virtue of their more ordered role within a domestic setting, while men are required to play a more aggressive individualistic role and are more exposed to stresses outside the home.

Suicide Among Farmers

The impossibility of relating rural suicides with certainty to hamlets or villages of identifiable size has been mentioned, but even though the number of suicides in intermediate sized rural communities is not known it is possible to determine the number in more extreme rural isolation. Farms are physically separate from other dwellings and often their isolation is considerable or extreme.

There were approximately 32,000 farmers in the twelve counties. (An estimate provided by the Welsh Department of the Ministry of Agriculture, Fisheries and Food. The Occupation Tables of the 1951 census give only the number of farmers and farm foremen combined.) In the five years of this study, there occurred 46 suicides among farmers; their suicide rate was 28·7 per 100,000. This rate is higher than that for any other group of persons, male or female, urban or rural, with the exception of the urban males in Cardiganshire. It is more than twice as high as the rural male suicide rate in any county.

It would appear then that the observation made above regarding sparsity of rural population and high suicide rates is supported by the frequency of suicide among farmers, but some consideration should first be given to possible influences other than isolation, namely age and specific stresses associated with the occupation of farming.

In comparing suicide among farmers with suicide among the remainder of the rural male population the balance of age is weighted against the farmers since the general rural male population includes children and young persons among whom suicide is comparatively rare, while it might be supposed that farmers would include many of the older and more vulnerable age groups. Suicides among farmers, however, tended to be younger than other rural male suicides; 78 per cent. of farmer suicides were below the age of sixty, while 57 per cent. of the other rural male suicides were below that age.

The influence of possible stresses peculiar to farming is less easily assessed. The "reasons" for suicide, even when given by attempted suicides who survive to be questioned, shed only a dubious light on the problem and are less reliable still when they are merely the opinion of relatives or friends who may have reasons, conscious or unconscious, for concealing or distorting the truth. In any case the expressed motives give only an incomplete explanation and are merely rationalizations of underlying emotional difficulties. The evidence given regarding the motives of these 46 farmer suicides was no more enlightening than for other suicides. Three appeared to have been psychotic, with paranoid delusions. Five were worried about physical ill-health. Six were worried about financial or labour difficulties in the farm. Fifteen had been depressed for some months for no known reason. Five were said to have appeared normal, well, and unworried. For the remainder a variety of reasons was given: bereavement, changed domestic circumstances, shame and fear of exposure. Involutional depression may be precipitated by environmental influences. Physical disability of recent sudden onset may cause feelings of helplessness and of despair regarding the future. Possibly the anxieties of this nature may be keener in farming, but otherwise there is no indication of stresses peculiar to this occupation.

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It has been shown that rural male suicides are most common in the counties whose rural areas are least populous. It appears probable that the high suicide rate among farmers is an extension of this tendency and is related to their isolation.

Suicide and Isolation

We are gregarious beings. Social isolation, said Sainsbury (1955), explains the high suicide rate in certain London boroughs. There is a high suicide rate among immigrants who have not yet become incorporated into the community in a strange country (Strauss, 1956).

The conditions which constitute social isolation cannot be specified simply. The number of people in a person's environment is no indication of the number of his social attachments. A sense of isolation may be present without actual physical isolation as in "subjective excommunication" (Strauss, 1956) when the individual feels himself excluded from society on account of old age or loss of social status. Residence in a crowded town is no security against loneliness, and life in a small country hamlet does not necessarily signify isolation. Nevertheless the smaller the community the fewer the possible social contacts, and in remote farms the social bonds may be very few.

It cannot be said that farmers are isolated in the sense that transient dwellers in boarding houses are isolated, but inquest records show evidence that holdings which some suicides farmed were poor and employed perhaps one or two labourers. A farmer on such a holding must spend much of his time in solitude. The number of suicides which occurred on such farms is unknown, but the writer was told by two coroners for predominantly rural areas that they had observed that an appreciable number of suicides occurred in the most isolated parts of their districts.

The effects of physical isolation have been the subject of biographical and experimental studies. The experiences of persons who survived partial or complete isolation at sea or in polar conditions showed a similarity in their mental reactions. Psychotic manifestations were almost invariable among those who survived singly and were experienced also, though less often, by those who survived in small groups (Raines, 1956).

Frost (1938) said that mechanisms released by solitude include hallucinatory projection so that suicide may occur at the command of hallucinatory voices. Physical isolation can produce effects similar to those of any other stress and may so magnify any coincident stresses that mental symptoms appear more intensely (Lilly, 1956). In isolation from external stimulation one is thrown more on internal resources (Bruner, 1959).

These studies may indicate the nature of the morbid state which underlies the proneness of farmers to suicide, and they support the suggestion made above that physical isolation may be responsible for the relatively high suicide rates which were found in the most sparsely populated rural districts.

Seasonal Variations of Suicide in Town and Country

Morselli (1881) observed that suicide was commoner in spring and early summer than in other seasons, and this observation has been repeated by various writers (Durkheim, 1897; Dublin and Bunzel, 1933; Dahlgren, 1945; Swinscow, 1951). The monthly distribution of the suicides throughout Wales substantially agreed with this. The highest peak occurred in the spring. A lesser peak occurred in the autumn. July and August showed a low elevation which

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was apparent also in the graphs provided by Swinscow (1951) for England and Wales.

It is known that the variations in suicidal frequency are associated with the seasons and not with the months of the year, for Swinscow pointed out that the converse monthly distribution of suicides occurred in Australia. Since this is so it was thought that it might be profitable to examine the seasonal behaviour of suicidal trends in rural communities where the cycle of the seasons has its greatest impact and significance. The following graphs show the monthly standardized figures expressed as a percentage of the five years' total of suicides. (Crude figures for the monthly incidence of suicide are standardized to compensate for the different lengths of the months.)

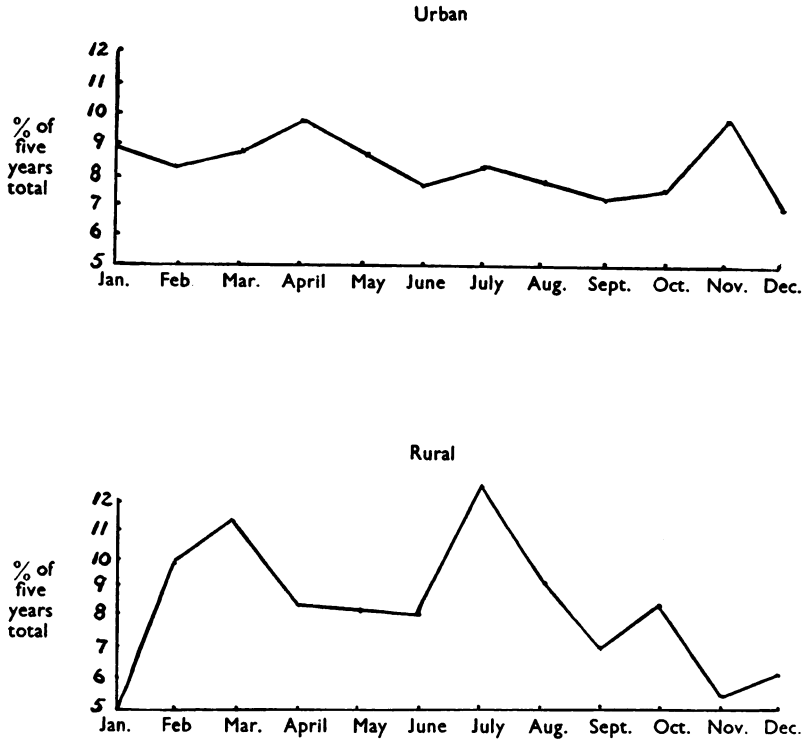


FIG. 2.—Monthly distribution of suicides, Wales. 1951–1955.

The graphs show that though there are resemblances between the seasonal fluctuations of urban and of rural suicides the amplitude of the fluctuations is greater in the country than in the towns. The rural range is from 5 per cent. to 12·3 per cent. while the urban range is only from 6·8 per cent. to 9·9 per cent.

The reason for the seasonal variations in the frequency of suicide is not known. Morselli (1881) suggested that the unaccustomed warmth of spring caused "irritability". Fifty years later, Mills (1935) said that the weather was more influential than economic conditions in the determination of suicide rates, and that suicide was most common in districts where changes in temperature and barometric pressure were severe and common. Durkheim (1897)

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believed that the explanation was to be found in the reduction of social integration by the migration of labour to the countryside in early summer, and in the lengthening period of daylight. Certainly suicide more commonly occurs in the hours of daylight, but the days are longer in June than in April while suicide is less frequent in the former than in the latter month, and it is doubted whether the migration of labour is today as extensive as it was when Durkheim wrote. More recently it has been observed that admissions to mental hospitals have a similar seasonal distribution, and that this may indicate that for some unknown reason the relationship between the individual and his environment is more strained in the warmer than in the cooler months (Swinscow, 1951).

There were no definite indications among the present findings to show why the number of suicides fluctuates in the seasons of the year. A certain peculiarity was, however, remarked which shows a possible method of approach to this problem.

It might be anticipated that seasonal variations in frequency would be more pronounced among rural than among urban suicides, for life is regulated more by the seasons in the country than it is in the towns, but we have seen that there occurred in addition in rural areas a high summer peak of suicides which was greater than the usually reported spring and autumn peaks. Probably this fact emerged because the criterion of rurality applied here was more definite and restrictive than the administrative classification upon which statistics are usually based.

This is a matter which deserves further attention for if, as is generally thought, some coincidental social change causes the seasonal variations in the number of suicides, then the observation, in this study, of a great and almost exclusively rural increase in suicide in mid-summer indicates a defined and limited problem whose solution might give an answer to the larger problem. The social change to be investigated would be annually recurrent, confined to mid-summer, and restricted to rural areas. The result of such investigation would not merely be of value for the prevention of suicide, but might indicate measures of value to mental health in general.

Summary

In Wales, as commonly occurs in other countries, suicide was proportionately more frequent in towns than in the country. This was so in nearly every county and in both sexes. Rural suicide rates for females were particularly low.

A remarkable increase in the suicide rate occurred between communities of under 1,000 persons and those of 1,000–2,000, but there was no constant increase in the frequency of suicide in progressively bigger towns such as has been described elsewhere. Neither was there apparently a continued fall of suicide rates in progressively smaller communities in rural areas. On the contrary, though it was not possible always to relate a rural suicide to a community of known size, there were indications that suicide became more common, particularly among men, as rural communities became smaller and more scattered. There was a high negative correlation between suicide rates of males in rural areas and the density of rural population.

The vulnerability to suicide shown by males in sparsely populated rural areas was particularly marked among farmers whose conditions of living and working must necessarily be more isolated than those of other country dwellers. The results of experimental and other investigations into the effects of physical

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isolation suggest a possible explanation for the relationship between sparsity of population and high rural suicide rates, and for the frequency of suicide among farmers.

Seasonal variations in the frequency of suicide in the total population followed the usually reported pattern of vernal and autumnal increases. In the country, however, these variations were much more pronounced than they were in the towns. A mid-summer increase in the number of rural suicides was particularly prominent and offers a suitable limited problem for further examination.

Two incidental findings suggest topics for research: (1) the substantial differences between the counties in their proneness to suicide; (2) the varying degrees among the counties by which female suicide rates differed from male suicide rates.

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