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Annotation

Parasuicide and Unemployment

S. PLATT

The current economic recession in Europe and North America has led to a renewal of interest in the possible consequences of mass unemployment for the nation's health. This annotation assesses the relationship between unemployment and one indicator of morbidity: parasuicide (non-fatal deliberate self-harm). A previously published review of the literature is supplemented by more recent research, particularly from Edinburgh and Oxford.

The relationship between parasuicide and unemployment among individuals

At least twenty studies have been published which include information on the proportion of parasuicides who are unemployed on admission to hospital. A number of these (e.g. Bruhn, 1962; Edwards & Whitlock, 1968; Hawton *et al*, 1982; Bille-Brahe *et al*, 1985; Hawton & Rose, 1986) draw attention to the fact that the unemployment rate among parasuicides is considerably in excess of that in the general population. Investigators have also calculated the incidence of parasuicide by employment status, consistently finding higher rates among the unemployed. Thus, in 1982, the parasuicide rate among unemployed men in Oxford was 708 per 100 000, while the equivalent figure for employed men was 46; the relative risk (the ratio of the parasuicide rate among the unemployed to that among the employed) was 15.4 (Hawton & Rose, 1986). In Edinburgh in the same year the parasuicide rates were 1345 and 114 respectively, giving a relative risk of 11.8 (Platt & Kreitman, 1985a). While there has been a downward trend in the parasuicide rate among the unemployed in Edinburgh over the period 1968–1984, the relative risk has fallen below 10 in only three years of the series.

The parasuicide rate among the unemployed tends to increase with longer durations of unemployment. In recent years the relative risk of parasuicide among men unemployed for more than a year (compared with employed males) has ranged between 26 and 36.6 in Oxford (Hawton & Rose, 1986) and 13.5 and 20.4 in Edinburgh (Platt *et al*, 1985). However, even recent job loss has been shown to be associated with relative risks of considerable magnitude. In Edinburgh the relative risk among those unemployed for less than four weeks has not fallen below 4.3 during the years 1982–84.

The Edinburgh and Oxford data sets also permit the calculation of parasuicide rates among males after controlling for possible confounding effects, such as age, social class and area of residence. In both cities, unemployed men of all age groups show elevated relative risks compared with the employed. The highest parasuicide rates among the unemployed are found in the 30–49 age group in Oxford and in the 25–54 age group in Edinburgh (Hawton & Rose, 1986; Platt, 1985). Among both employed and unemployed in Edinburgh an inverse relationship between parasuicide and social class was evident, with highest rates in social class V (Registrar-General, 1980). The relative risk of parasuicide among the unemployed was significantly high in each social class group, ranging from 8.4 in class IV to 29.0 in classes I and II. While there was considerable variation in parasuicide rates by employment status across different geographical areas of Edinburgh, the lowest relative risk (7.4 in 1970–72 and 4.4. in 1980–82) was significantly greater than zero (Platt & Kreitman, 1985a).

It is noteworthy that in Edinburgh the highest relative risks are found in the years (1968–74), social classes (I and II), age groups (55 years plus) and areas (with above average proportions of professionals and owner-occupiers) characterised by the lowest rates of unemployment; i.e. there is a marked tendency for the relative risk to fall as the unemployment rate rises. Nevertheless, an analysis of trends in population-attributable risk shows that in recent years as much as half of the overall parasuicide rate in Edinburgh may be "attributable" to unemployment, since the declining rate of parasuicide among the unemployed over the years has been more than offset by the increase in the numbers at risk. In consequence, the absolute numbers of unemployed parasuicides and the proportion they form of all hospitalised parasuicides have increased steadily over the period (Platt & Kreitman, 1985a).

Personal characteristics of employed and unemployed parasuicides

In their study of male parasuicide patients admitted

to the general hospital psychiatric service in Oxford, Hawton & Rose (1986) showed that, compared with the employed, the unemployed were significantly more likely to be psychologically vulnerable, i.e. to have received psychiatric treatment in the past, to be in treatment at the time of the parasuicide episode, to be diagnosed alcoholic, and to be parasuicide repeaters. Platt & Duffy (1986) examined correlates of joblessness in two cohorts of first-ever male parasuicides: one admitted to the Regional Poisoning Treatment Centre (RPTC) in Edinburgh during the years 1969–71 (a period of relative prosperity), and the other admitted to the RPTC during 1980–83 (a period of economic recession). Overall, the unemployed were significantly more likely to be unmarried, to live alone or in an institution, to have experience early separation from their mother, to have received psychiatric treatment, to be given a diagnosis of abnormal personality, to have a criminal record, to be in serious debt, and to misuse drugs habitually. These differences appeared to be unaffected by the prevailing economic climate.

A further examination of variation in personal characteristics among parasuicides was undertaken by Platt (1986). In a cohort of unemployed male first-ever parasuicides admitted to the RPTC in 1982–83, significant differences by duration of unemployment were found on four of the response variables: civil state, age, personality diagnosis, and receipt of psychotropic medication. While there was no clear duration-related trend in respect of civil state or age, longer durations of unemployment were significantly associated with a greater prevalence of personality abnormality and receipt of psychotropic medication. Hawton & Rose (1986) also state that in their cohort of male parasuicides admitted in Oxford, significantly more of the long-term unemployed (compared with the short-term unemployed) are psychologically vulnerable. However, no data are provided.

In a third study from Edinburgh, Platt & Dyer (1986) measured variation in psychological features associated with unemployment among a sample of economically active male parasuicides admitted to the RPTC in 1979. Employed and unemployed individuals did not differ in the degree of suicidal intent, but the unemployed were significantly more likely to be depressed and to describe feelings of hopelessness. Even after partialling out the effect of depression, the unemployed remained more hopeless.

The ecological relationship between parasuicide and unemployment

Analyses of the relationship between unemployment and parasuicide rates across geographical areas have revealed a significant positive correlation in Brighton, 1966–68 (Bagley *et al*, 1973) and in Edinburgh, 1968–73 (Buglass & Duffy, 1978). Platt & Kreitman (1984, 1985a) correlated male unemployemnt and parasuicide rates across 23 electroral wards (1970–72) and 31 regional electoral divisions (1980–82) in Edinburgh. In both periods the ecological correlations were highly significant ($r=0.76$, $P<0.001$ in 1970–72; $r=0.95$, $P<0.001$ in 1980–82); the increase in correlations over the decade was also significant ($P<0.001$). Platt & Kreitman (1985a) further examined the relationship between unemployment and parasuicide to determine if the connection between them could be ascribed to common third factors such as social class and poverty. Partialling out the effect of variations in the social class composition of the city districts reduced the magnitude of the observed correlations (from 0.76 to 0.51 in 1970–72 and from 0.95 to 0.81 in 1980–82), but the resulting correlations remained significant for both periods. On the other hand, after controlling for the level of poverty the partial correlation in 1970–72 fell to a non-significant level ($r=0.13$) (data were not available to perform this analysis for 1980–82.) Thus unemployment appears to be associated with parasuicide only in so far as it relates to poverty or to some other variable closely connected with poverty.

Forster & Frost (1986) report a substantial (but non statistically significant) correlation between the medical self-poisoning rate (based on persons age 15–44 years admitted to hospital because of adverse effects of medical agents) and the unemployemnt rate across 12 regional health authorities in England and Wales in 1978 ($r=0.57$, NS). A multiple regression analysis performed on the medicinal self-poisoning rate as the dependent variable and the psychotropic prescription rate, unemployment rate and admissions capacity rate (a measure of bed availability) as the independent variables demonstrated that only the psychotropic prescription rate met the criteria for retention in the equation.

Only three reports are available on the relationship between unemployment and parasuicide rates over time. Among Edinburgh male residents the temporal association was found to be significantly positive overall ($r=0.62$, $P<0.02$) during the period 1968–83. It should be noted, however, that the relationship between unemployment and parasuicide over the first eight years of the period was strikingly different to that found over the final eight years: it was positive between 1968 and 1975 ($r=0.92$, $P<0.01$); and negative between 1976 and 1983 ($r=-0.67$, NS) (Platt, 1985). In Hartlepool during the period 1974–83 the unemployment rate quadrupled while the parasuicide rate (as measured by

hospital admissions diagnosed as principally suffering from toxic effects of drugs or chemicals) remained fairly constant ($r = 0.23$, NS) (Furness *et al*, 1985). In Oxford, the correlation between the male unemployment rate and the male parasuicide rate over the period 1976–82 was negative, though not significant ($r = -0.69$) (Hawton, personal communication.)

Discussion

The ecological studies provide somewhat contradictory results. The correlation between parasuicide and unemployment rates across geographical areas is positive, if not always significant, and is markedly reduced when controls for the level of poverty and the psychotropic prescription rate are introduced. Data from Hartlepool and Oxford show that there was no temporal relationship between parasuicide and unemployemnt from the mid–1970s onwards. In Edinburgh the correlation was found to be positive until 1982, when the parasuicide rate declined precipitately while the unemployment rate continued to rise. This reversed pattern, maintained in 1983 and 1984, might have been anticipated on theoretical grounds: as economic recession worsens, the stigma associated with unemployment would be expected to be less marked, unemployed people would be more integrated in the social order, and their parasuicide potential would decrease. Each unit increase in unemployment above a certain level would be likely to bring about a smaller unit change in parasuicide. When mass unemployment becomes endemic, the change might indeed become negative (such a polynominal equation has been shown by Stack (1981) to fit the relationship between divorce and suicide.

Other explanations of the recent fall in parasuicide incidence include a reduction in the number of prescriptions for hypnotics and tranquillisers (Brewer & Farmer, 1985), a decline in *per capita* alcohol consumption, and a change in cultural attitudes to parasuicide. We also have to consider the suggesiton that the fall in the hospital-treated parasuicide rate may be an artefact of changes in medical approaches to the treatment of parasuicide. There is a growing belief among researchers in the field that a smaller proportion of parasuicides are admitted to hospital than formerly. However, there are no empirical data to test this possibility.

The individual-level studies produce more consistent findings and clearer evidence of an association between unemployment and parasuicide. Parasuicide rates among the unemployed are markedly higher than those among the employed, the relative risk rarely dropping below 10 in the Edinburgh series. Relative risk remains significantly high after controlling for social class, age and area of residence. While the impact of recent job loss has been shown to be quite marked, the highest rates (and risks) are found among the long-term unemployed. Finally, the attributable risk analysis shows that over 50% of the overall parasuicide rate may be attributable to unemployment in recent years.

The epidemiological analyses highlight an inverse relationship between the rate of parasuicide among the unemployed (and relative risk) and the prevailing unemployment rate. To account for these findings, Platt & Kreitman (1985a) speculate that the unemployed individual considers himself less socially stigmatised and personally deviant in social situations or contexts of high unemployment than in situations of low unemployment. Consequently, the psychological impact of unemployment may be significantly less marked in high rate unemployment areas, in years of economic recession, and in age groups and social classes where unemployment is a relatively common experience. Discussing the negative temporal relationship between changes in the parasuicide rate among the unemployed and changes in the unemployment rate, Platt & Kreitman (1985a) also suggest that the high rates in the earlier years may reflect a marked degree of psychological and social impairment among those comparatively few individuals who remain unemployed in times of full employment. The decline in the parasuicide rate over subsequent years probably signals the dilution of the 'unemployable' group by others whose status is decreasingly a consequence of personal handicap and increasingly the outcome of impersonal, economic factors.

Platt & Kreitman (1985a) conclude that their findings "are entirely compatible with the hypothesis that unemployment is a cause of parasuicide", although they explicitly recognise that "parasuicide results from the complex interaction of many factors". Their conclusion has been questioned by Shapiro & Parry (1985) and by Hawton & Rose (1986). Shapiro & Parry claim that their finding, that unemployed parasuicides rarely mention unemployment as an important or secondary current problem, gives "no support to the suggesiton that those who commit parasuicide see unemployment as being relevant to their action". They go on to warn of the danger of interpreting the higher risk of parasuicide among the unemployed as evidence of a "casual connection". In reply, Platt & Kreitman (1985b) point out that they nowhere suggest that unemployment is a *precipitant* of parasuicide. Indeed, given the finding that parasuicide risk increases with greater durations of unemployment, it would make no sense logically to do so. However, prolonged unemployment may be

a significant *predisposing* factor in suicidal behaviour because it leads to an increase in family tensions, arguments and violence; more depression and hopelessness; increasingly isolation from others; changes in role structure within the family; financial hardship and material deprivation; loss of self-esteem and self-confidence; feelings of reduced self-worth; or any combination of these sequelae. A provoking agent (e.g. argument with spouse) would be more likely to lead to parasuicide in the presence of unemployment (and its associated behavioural correlates) than in its absence (Platt, 1984). Economic recession may also have an indirect effect on psychological well-being and parasuicide by increasingly labour market marginalisaiton. Those in work are subjected to higher levels of stress, e.g. by enforcing pay restraint, reducing job insecurity and demanding higher productivity. Individuals who in times of full employment are only parially integrated into the workforce and tend to move in and out of work on a regular basis (the subemployed) may find that the opportunities for this lifestyle are severely limited during times of economic instability. Among male parasuicides admitted to the RPTC the sub-employed, previously constituting about a quarter of the total, now account for less than 10%. Virtually all of the 'missing' group will have joined the ranks of the long-term unemployed.

In their discussion of the research evidence from Oxford and Edinburgh, Hawton & Rose (1986) consider the possibility of an indirect causal link whereby unemployment may "precipitate or exacerbate factors known to increase the risk of suicidal behaviour, such as social and interpersonal difficulties, poverty and psychiatric disorders". The findings of a higher prevalence of psychiatric treatment and alcoholism among the unemployed and higher risks of parasuicide in the long-term unemployed would be predicted by such an indirect causal link. However, the findings are also compatible with another type of explanation: that both unemployment and parasuicide are causally related to a third factor. Hawton & Rose postulate that the psychologically vulnerable may be more likely to become and remain unemployed, particularly during a recession, and to engage in self-harmful behaviour. The long-term unemployed may be most at risk of parasuicide because people with psychological vulnerability are over-represented in this group, rather than as a result of the unemployment experience itself. In their conclusion, Hawton & Rose state firmly that we are not currently in any position to decide between these two types of explanation and urge more research on this topic. Clearly their plea deserves to be heard, for both scientific and practical reasons. There are still may areas of ignorance which require illumination, including the link between unemployment and parasuicide among women, the mechanisms by which prolonged unemployment may raise the risk of parasuicide in marginal subgroups, the importance of hopelessness as an intervening social-psychological variable, the temporal relationship between onset of personal difficulties and unemployment among parasuicides, and the role of personality disorder as a possible common link between the two variables. In the meantime, however, we are faced with incontrovertible evidence that the long-term unemployed suffer an unacceptably high risk of parasuicide and that the overall level of parasuicide could be reduced even more if there were a return to fuller employment. Further research is unlikely to alter these facts and their obvious implications for national social and economic policy.

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Stephen Platt, BA, MSc, PhD., *Research Sociologist, MRC Unit for Epidemiological Studies in Psychiatry, University Department of Psychiatry, Royal Edinburgh Hospital, Morningside Park, Edinburgh EH10 5HF*

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