

## Social Bonds in the Epidemiology of Neurosis: A Preliminary Communication

By SCOTT HENDERSON, D. G. BYRNE, P. DUNCAN-JONES, SYLVIA ADCOCK,  
RUTH SCOTT and G. P. STEELE

**SUMMARY** In a random sample of the general population ( $N = 142$ ) a strong inverse relationship was found between social bonds and the presence of neurotic symptoms. This association was strongest in the case of close affectional ties. Together, measures of social bonds accounted for 47 per cent of the variance in neurotic symptoms. While there is likely to be contamination between the two sets of variables, and while the data do not indicate the direction of causality, these findings constitute an aetiological lead which should be pursued.

An association has been proposed between neurosis and the lack of social bonds (Henderson, 1974; Brown *et al.*, 1975; Miller and Ingham, 1976; Bowlby, 1977; Henderson *et al.*, 1977). In different ways, these authors have suggested a causal relationship, in which deficiencies in social bonds lead to, rather than are caused by, neurotic symptoms. Demonstration of a social aetiology for neurosis, in which a lack of social bonds accounted for much of the variance, would be a substantial contribution to psychiatric theory. It would also raise important issues for treatment, alongside established psychological and pharmacological methods.

We report here the results of a preliminary study which had two aims: to look for the above association in a general population sample, so avoiding the dangers of bias in a clinical population; and to examine a range of social bonds, from the closest affectional ties to those further out in the primary group. The hypotheses were (i) that in the general population, a positive relationship holds between the prevalence of neurosis and the lack of social bonds; and (ii) that the association is strongest for affectionally close ties. We believed it necessary to establish both of these before embarking on the much more demanding task of investigating causality in a prospective design.

### Method

A random sample of 183 addresses was drawn from two Canberra suburbs. At each address, one adult was designated for interview using the respondent selection method of Kish (1965). The interview schedule had been extensively pre-tested and was administered by six experienced interviewers who were trained for one week. Each made two off-sample interviews before beginning the fieldwork. The interviewers were not aware of our hypotheses. Respondents were asked to help in some research on health and stress. Interviews were conducted on 151 persons, representing a response rate of 90 per cent of those eligible for the survey. The main findings presented here are based on the 142 respondents on whom complete information was available.

Psychiatric morbidity was assessed by the 30-item General Health Questionnaire (GHQ) (Goldberg, 1972; Goldberg *et al.*, 1976), an instrument which has been demonstrated to have high levels of sensitivity and specificity in identifying non-psychotic psychiatric disorder, particularly neurosis, and which has been validated in an Australian population (Tennant, 1977). A proportion of the respondents went on to have the Present State Examination (PSE) (Wing *et al.*, 1974) some days later. This provided

a rigorous description of the symptoms and disorders encountered. Aspects of this part of the survey are being reported elsewhere. The present results are based on respondents' GHQ scores.

#### *Measures of Social Bonds*

The social environment for an individual was assessed by the Interview Schedule for Social Interaction (ISSI). This instrument, consisting of fifty questions, has been designed by our Unit to examine a person's social environment. First the extent and type of three defined categories of social relationship is ascertained: persons to whom one is closely attached; friends, in the form of non-kin, with whom one has a relationship which is voluntary, sought after and affectively comfortable; and acquaintances, with whom transactions are based principally on the mechanics of day-to-day living. The ISSI establishes the number of persons in each of these categories and the reported adequacy of this. While these areas are examined in detail, other aspects of social relationships are treated more briefly. The whole instrument provides measures of the extent to which the respondent currently obtains the six 'provisions of social relationships' proposed by Weiss (1974) as those commodities which the social environment has to supply for a person to maintain psychological well-being. These are attachment, social integration, opportunity for nurturance, reassurance of worth, a sense of reliable alliance, and obtaining guidance. Because the first two of these provisions are particularly relevant to the present study they are defined here in more detail: *Attachment* is a sense of security provided by affectionally close relationships, such as is commonly found between spouses. It is based on affection, mutual trust and support. *Social Integration* is obtained by membership of a network of persons who share common concerns and values. This network provides companionship, a base for social events, the sharing of common experiences and an opportunity for the exchange of services.

Of necessity, the description of the measures of social relationships given here has been condensed. A much more full account will be

given in later publications. We shall report here the dependence of the GHQ score on *groups* of summary variables, descriptive of the strength and the perceived adequacy of social bonds. These groups are summarized as follows: *Available Attachment*: three indices of the number of attachment figures and the number of different facets of attachment which are currently available to the respondent. *Friends and Acquaintances*: two indices measuring the availability of friendships and of acquaintances. *Adequate Attachment*: indices of the number of facets of attachment that are currently met sufficiently for the respondent's needs. *Unpleasant Social Interaction*: three indices of the extent of rows or other unpleasant interaction. *Wanting more*: five indices of expressed need for more or better social relationships.

#### **Findings**

The total sample contained 41 persons (27 per cent) with a GHQ score over 4; this is Goldberg's suggested criterion for 'cases' on the 30-item GHQ. From the PSE interviews ( $N = 68$ ), we estimated a prevalence rate of 13 per cent for classifiable psychiatric disorder, usually depression or anxiety. A further 31 per cent had non-specific neurotic symptoms not severe enough to allow their classification within the ICD. Where the PSE was conducted within a week of the GHQ in the initial interview, the total PSE score correlated 0.84 with GHQ score ( $N = 39$ ), confirming the validity of the latter instrument.

A multiple regression analysis was carried out to determine the contribution of each of the ISSI measures to the variance in GHQ score. This was done for each group of variables taken separately and also by a single regression equation to show the incremental effect of entering each group of variables in turn.

Table I shows in the first column the proportion of variance in GHQ score explained by each of the groups of ISSI variables. Available attachment accounts for 16.2 per cent (about one sixth) of the variance in GHQ score. Availability of friends and acquaintances, considered separately, accounts for 7.4 per cent of the variance. Each of the last three groups of

TABLE I  
GHQ score and measure of social bonds

	Explained variance in GHQ score (%)	
	For each group of variables separately	In a single equation
Available attachment	16.2	16.2
Friends and acquaintances	7.4	3.7
Adequate attachment	23.0	7.1
Unpleasant social interaction	25.3	14.0
'Wanting more'	27.3	5.9
	Total = 46.9%	

variables accounts for about one quarter of the variance.

There are substantial correlations between these groups of variables, so that the variance explained by one group has some overlap with that explained by another. This is particularly true for Available Attachment and Adequate Attachment; many of the items entering the first set of indices also enter the second set, with somewhat different scoring. The second column of Table I shows the incremental effect of entering each variable in turn into a single regression equation. The groups were entered into the equation in the order in which they are listed. Thus Available Attachment explains 16 per cent of the variance, as before. When Friends and Acquaintances are added into the equation, they explain an *additional* 3.7 per cent of the variance, independent of that already explained by the first group of variables. Similarly, Adequacy of Attachment explains an additional 7 per cent of the variance, beyond that already explained by the first two groups of variables. All five groups of variables taken together explain 46.9 per cent of the variance in GHQ score. If the groups were entered into equation in a different order, the total explained variance would remain the same, but the amount of variance attributed to each group would change.

## Discussion

A strong link has been found between neurosis and deficiencies in social bonds. The present findings suggest that this association is stronger for close affectional bonds than for relationships with friends and acquaintances. Both hypotheses were therefore confirmed. The direction of causality in this association must now be examined, because it clearly could be due to an adverse effect of neurosis on social relationships or their reported adequacy, as we have discussed in some detail elsewhere (Henderson *et al*, 1978): the association may be due to persons with a disturbance of mood reporting unfavourably on adequate relationships; or they may be uncongenial company, driving away the support they need and seek. A third variable in the form of personality traits may lead both to the development of neurotic symptoms and to an inability to form and maintain mutually rewarding personal relationships (Foulds, 1965).

We have sought to divide our measures of social bonds into those more or less susceptible to contamination by the effects of psychiatric illness. The first two groups of variables report the present state of respondent's social relationships with, we believe, a smaller evaluative component than some of the other variables and hence less likelihood of contamination. It is for this reason they were entered into the overall equation first. Together, they account for 19.9 per cent of the variance in GHQ.

Irrespective of causality, the present findings suggest that a very large part of the variance in minor psychiatric disorder is associated with deficiencies in social relationships. Allowing for unreliability in measurement, we estimate that over half the reliable variance in GHQ score is shared with a range of measures of adequacy of social bonds. This strongly supports a view of neurosis as principally a social illness. It is worth noting that only three out of the 30 items comprising the GHQ have any reference to interpersonal relationships. If these items are excluded from the GHQ score, the findings given above are scarcely altered.

On the basis of these results, we suggest that the social bond hypothesis deserves further investigation. We are currently interviewing a

larger population sample, and plan a follow-up study to examine the temporal order of changes in symptoms and in social bonds.

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Scott Henderson, M.D., F.R.A.C.P., *Director*,

D. G. Byrne, B.A. (HONS.), PH.D., M.A.P.S.S., *Research Fellow*,

P. Duncan-Jones, M.A., *Senior Research Fellow*,

Sylvia Adcock, B.A., *Research Assistant*,

Ruth Scott, B.A., *Research Assistant*,

G. P. Steele, M.B., M.R.A.N.Z.C.P., *Research Fellow*

*National Health and Medical Research Council, Social Psychiatry Research Unit, The Australian National University, Canberra, Australia 2600*

Reprint requests to Dr A. S. Henderson.

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