Qualitative differences in psychiatric symptoms between high risk groups assessed on a screening test (GHQ-30)

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Summary. Scores on five subscales derived from the GHQ-30 have been examined in various groups at risk for psychiatric disorder, to determine whether different patterns of symptoms are found. The subscales are based on a factor analysis of a population sample of over 6,000 adults (Huppert et al. 1989) which identified five robust factors corresponding to symptoms of anxiety, feelings of incompetence, depression, difficulty in coping and social dysfunction. Previous studies have identified certain groups of people who are vulnerable to mental illness and are therefore likely to obtain a high score on the GHQ. These include unemployed men, single women with dependent children, and elderly people in poor health. The results show marked differences in symptom patterns among these three at-risk groups. For example, while scores on anxiety and depression subscales were significantly raised in most at-risk groups, young unemployed men did not show significant anxiety whereas elderly men in poor health did not show significant depressive symptoms. However both these groups showed difficulty in coping, unlike older unemployed men or elderly women in poor health. Single women with dependent children reported the highest rate of psychiatric symptoms, particularly anxiety and depression, but had difficulty in coping only if they were also employed. These findings suggest that this method of analysing data from the GHQ-30 has potential value in yielding qualitative as well as quantitative information about psychiatric symptoms.

The 30-item General Health Questionnaire (GHQ) of Goldberg (1972) is widely used as a unidimensional measure for screening functional psychiatric illness. The typical scoring technique, in which 30 questions are summed to form a single continuous score, provides no indication of the pattern of response. With this in mind, using data collected as part of the Health and Lifestyle Survey (Cox et al. 1987), a series of factor analyses were carried out on a sample of 6,000 questionnaires (Huppert et al. 1989). The reliability of the factor structure was demonstrated by repeating the analysis on ten independent random samples from the population and on each of six age groups for men and women separately. The identification of five robust and independent factors corresponding to different types of psychiatric symptoms (anxiety, feelings of incompetence, depression, difficulty in coping and social dysfunction) suggests that it is possible to look at the data in a more qualitative way. To this end, we have selected three groups of people who are currently receiving attention as being at risk for psychiatric disorders due to their social circumstances. These are unemployed men, single women with dependent children, and elderly people in poor health.

Considerable evidence has accumulated supporting the association of unemployment and psychological distress (Warr 1982). Documentation of this relationship ranges from the finding that unemployed men are more likely to attempt suicide or parasuicide (nonfatal deliberate self-harm) than employed men (Hawton and Rose 1986; Platt and Kreitman 1984), and more likely to report psychiatric morbidity as assessed by the GHQ (Banks & Jackson, 1982). These adverse effects of unemployment may be more severe for men during middle age (Hawton and Rose, 1986). The finding that the unemployed are also more ill physically (e.g. Blaxter 1987) complicates the relationship, making it difficult to ferret out direct from indirect effects, much less determine causality. As the current study is correlational, it will not be possible to evaluate the causal direction. However, by controlling for number of physical symptoms, we can attempt to remove the confounding influence of physical illness from the effect of employment status.

There is also mounting evidence that single women with dependent children are at higher risk of experiencing psychological distress than their counterparts with partners. It is important to highlight the interactive nature of this relationship. The effect of marriage for women seems to depend on a host of other variables, including social class, social support, life events, employment and parental status (Cleary and Mechanic 1983; Parry 1986; Warr and Parry, 1982). As the emphasis of this paper is methodological, we chose to focus on two of these, the effects of...
marital status and employment on women with dependent children. Specifically, evidence is emerging that employment may affect single mothers with dependent children in some aspects of psychological functioning, but not in others. By comparing the patterns of responses on the GHQ, it is possible that some subtle, hitherto undetected, relationship between the marital and employment status of women with dependent children may be revealed.

Another group considered to be at risk for psychological morbidity is elderly people who are physically ill. The positive relationship between physical health and mental health is well documented (Costa and McCrae 1980; Linn and Linn 1980; Smith Monson and Ray 1986) and seems to be evident across cultures (Cockeram et al. 1988) and across genders (Costa and McCrae, 1987). Moreover, people generally experience more troubling symptoms as they grow older. Thus, even if elderly people are not necessarily more psychologically distressed as a function of age alone, it seems likely that many of them are ill and, as a result, at risk.

Our own data (Huppert et al. 1987) support these basic findings. By examining responses to the 30-item General Health Questionnaire in a more qualitative way, i.e. by looking at scores on subscales of the GHQ, differences in symptomatology among these at-risk groups may be revealed.

**Method**

During the first stage of the Health and Lifestyle Survey, 9003 community residents aged 18 and over took part in an extensive home-based initial interview. These subjects comprised a representative sample of the adult population of England, Scotland, and Wales. Considerable information relevant to the current study was gathered at this point in the data collection process including the demographic data (gender, age, household status, marital status, parental status, and employment) as well as an illness score (sum of number of physical symptoms endorsed from a 16-item check list). Of the original participants, 7414 (82.4 %) agreed to the second stage of the study, a nurse's visit involving a series of physiological measurements and simple tests of cognitive function (see Cox et al. 1987; Huppert et al. 1987). The 30-item General Health Questionnaire was introduced to the respondents at the conclusion of this second visit. Of those accepting the questionnaires, 6572 (88.6 %) returned them by mail in pre-paid envelopes. Analyses were conducted on the 6317 completed questionnaires.

In the GHQ-30, the four response categories to the positively worded items are labelled ‘better than usual/more so than usual’, ‘same as usual’, ‘less than usual’, and ‘much less than usual’, whereas the response categories for the negatively worded items are ‘not at all’, ‘no more than usual’, ‘more than usual’, and ‘much more than usual’. Two scoring techniques were employed for this report. First, a conventional unidimensional GHQ score was calculated, where responses were simply dichotomized into essentially asymptomatic (two lower categories) or symptomatic (two higher categories), resulting in a final score ranging from 0 to 30 (i.e. from no symptoms present to all 30 symptoms present). For a general population sample the recommended cutoff when the GHQ is used as a screening test is 4/5 (Tarnopolsky et al. 1979) i.e. any respondent scoring 5 or more is considered to be a potential case of psychiatric disorder. Alternatively, the GHQ items can be scored with a Likert format where subjects’ responses to each of the thirty items can take on a value from 0 to 3. The subscale scores were based on the latter scoring technique.

As we reported previously (Huppert et al. 1989), factor analysis of the GHQ responses (Likert scoring) for this sample identified five independent factors corresponding to anxiety, feelings of incompetence, depression, difficulty in coping and social dysfunction. Five subscales were then derived by summing an individual’s scores on each of the items that contributed substantially to a particular factor (Appendix A). The number of items making a sizable contribution to each factor varied from eight items for the anxiety factor to only three items on the social dysfunction factor. In order to standardise the scores obtained on different subscales, each score was divided by the number of items in the subscale and then expressed as a score from 0 to 100.

**Group selection**

The first group we identified to be at risk was unemployed males between the ages of 18 and 64. As the proportion of nonmanual men who were unemployed was small (3 %), we confined our analyses to manual workers. The comparison group was limited to full-time employees since less than 2 % of the manual workers were employed part-time. Within this analysis we compared younger (18–39 years of age) with older subjects (40–64 years of age). Although in selecting this sample we ruled out men who were unemployed due to poor health, there could still be some variance in symptomatology, perhaps related to age, that could confound the analysis. We employed the illness score described above to control for this effect.

The second group identified to be at risk was single women (aged 18–44) with dependent children; they were compared to “married” women with dependent children. The married women category included all women who lived with a partner, regardless of their marital status. In fact, only 2 % of the couples were not married. For convenience we will refer to this group as married for the remainder of the paper. Employment status, also a potentially critical factor in the psychological health of women with dependent children, was also included in the analysis. Slightly over half of this sample of women were employed; twice as many of the women were employed part-time (fewer than 30 hours) as full-time (30 hours or more).

Lastly, the third group perceived to be at risk was elderly people (65+) who were physically ill. The number of physical illness symptoms reported in the initial interview was dichotomized into high (four through six symptoms) and low (fewer than four symptoms). We chose six as the cutoff because the distribution of scores is larger for women, with fewer men falling in the tail. As men and women are typically found to differ in terms of both psychological distress and illness scores (e.g., Nathanson, 1975), gender was included in the analysis.