PAID EMPLOYMENT, SOCIAL STRESS AND MENTAL HEALTH

IN WORKING CLASS WOMEN WITH YOUNG CHILDREN

Thesis submitted for the degree of

Doctor of Philosophy

by

Glenys Parry

To my parents

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SUMMARY

Working class women with dependent children are at a relatively high risk
of mental health problems. Hypotheses about the association of a) paid
employment, b) life event stress, c) social support and d) the presence
of a preschool child with mental health were tested in a community survey
of 193 working class women with young children. Subject selection
minimised confounding between these variables. I tested for a direct
relationship of employment with a range of mental health variables and
also examined it in interaction with social stress. Reliable measures
of sex role beliefs and work satisfaction, which had been developed in
pilot studies, were also used to examine whether mothers' attitudes
moderated the employment/health relationships. The 'stress buffering'
hypothesis of social support was also investigated, as were three models
of the relation of negative cognitive style to depression. Further
analyses examined the psychological characteristics of respondents in the
community falling at the threshold level of psychiatric symptomatology in
the case identification procedure.

ACKNOWLEDGEMENTS

The study to be described in this thesis was designed and implemented as part of the research programme at the Medical Research Council/Economic and Social Research Council Social and Applied Psychology Unit, University of Sheffield (Director: Peter Warr). I was a member of the scientific staff from 1977-1983 and worked as part of the Unit's team of clinical psychologists (Chris Brewin and later Jenny Firth) headed by David Shapiro. It evolved that my primary role was to investigate the relationship of paid employment to mothers' mental health. I registered as a candidate for a PhD in 1981, having gained 'Independent Research Worker' status that year. This entitled me to register under Ordinance 3(e) of the University regulations. Dr. Shapiro kindly agreed to be my research adviser for this registration.

My task as a Unit member was to communicate the findings of the study through publication. The thesis is therefore slightly unusual in that the results of the study are presented in the form of papers for publication. The following ruling of the Senate of the University of Sheffield governs the incorporation of published work in a PhD thesis:

"A thesis submitted for the degree of PhD should be a detailed and coherent account, complete in itself, of the research carried out by the candidate during his approved period of study. Work already published may be embodied in the thesis, provided always that it is relevant to the subject of the thesis and that the above condition is fulfilled. On this matter a candidate should seek advice before preparing the thesis."

After consultation with Dr. Shapiro, I am submitting this thesis as a complete account of the work I carried out in the study of a sample of working-class mothers in Sheffield. The study was conceived, designed and implemented as a coherent programme of work to investigate a range of psychosocial variables in addition to paid employment. The project was my responsibility and I have only incorporated my published work a) when it arises directly from it and b) where I am the sole or senior author. Three related papers on which I am the junior author are included in the Appendix for ease of consultation.

Chapters One and Two are introductory, reviewing existing studies relating to the mental health of mothers in terms of socio-demographic factors (including paid employment) and social stress factors, respectively. Chapter Three examines the choice of measures more thoroughly than can be done in published papers. Chapter Four gives an overview of the sequence of pilot studies and the main sampling procedure. Chapter Five describes the development and reliability testing of measures and incorporates published work. Chapters Six to Ten describe the study methods and results. Each of these chapters is written for publication and hence is complete in itself with an introduction, method, results section and conclusion. Inevitably this leads to some repetition, but it is hoped that the sense of deja vu (or rather 'deja lu' to borrow Koestler's phrase) is not too tedious for the reader. Chapter Eleven summarises the findings and draws general conclusions. The following papers from the study have appeared or are forthcoming:

Chapter Five

Parry, G., Shapiro, D.A. and Davies, L. (1981) Reliability of life events ratings: an independent replication. British Journal of Clinical Psychology, 20, 133-134.

Parry, G. (1983) A British version of the Attitudes to Women Scale. British Journal of Social Psychology, 22, 261-263.

Parry, G. and Warr, P.B. (1980) The measurement of mothers' work attitudes. Journal of Occupational Psychology, 53, 245-252.

Chapter Six

Parry, G. (1986) Paid employment, life events, social support and mental health in working class mothers. Journal of Health and Social Behavior, 27, 193-208.

Chapter Seven

Parry, G. (in press) Sex role beliefs, work attitudes and mental health in employed and nonemployed mothers. British Journal of Social Psychology.

Chapter Eight

Parry, G. and Shapiro, D.A. (1986) Life events and social support in working class women. Stress buffering or independent effects? Archives of General Psychiatry, 43, 315-323.

Chapter Nine

Parry, G. and Brewin, C. Cognitive style and depression: symptom-related, event related or independent provoking factor? Submitted for publication.

Chapter Ten

Parry, G. Cases on a continuum: The psychological characteristics of PSE cases, threshold cases and noncases in a community survey. Submitted for publication.

The three related papers which are referred to in the text are:

Appendix

Warr, P.B. and Parry, G. (1982a) Paid employment and women's psychological

   well-being. Psychological Bulletin, 91, 498-516.

Warr, P.B. and Parry, G. (1982b) Depressed mood in working class mothers

   with and without paid employment. Social Psychiatry, 17, 161-165.

Mollon, P. and Parry, G. (1984) The fragile self: Narcissistic

   disturbance and the protective function of depression. British Journal

   of Medical Psychology, 57, 137-146.

Glenys Parry,

Summer 1986

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CHAPTER ONE: PAID EMPLOYMENT AND MENTAL HEALTH IN MOTHERS

1.1 The mental health of mothers

Mothers of young children, and in particular working class mothers, are at a relatively high risk of minor psychiatric morbidity. The evidence for this statement comes from a wide range of epidemiological studies examining the effects of sex, marital status, parental status and social class on rates of affective disorder.

Women are, in general, found to be twice as likely to be suffering depression than men, not just in terms of absolute numbers of patients but in rates per population group adjusted for age. In a widely cited paper, Weissman and Klerman (1977) reviewed 31 studies of treated cases, 15 population surveys and 27 studies of suicide attempts. They found a modal ratio of 2:1, women to men (estimates of relative risk ranged from 0.6 to 6.7, but in 73% of studies was between 1.5 to 2.5). Given the differences between studies in time period (1910 to 1973), cultures, methods and measures, the degree of consistency is indeed striking. Weissman and Klerman (1977) noted that help seeking patterns could not account for this preponderance. Although other hypotheses (such as a substantial portion of depressed men appearing in statistics of alcoholism and sociopathic behaviour or gross under-reporting of symptomatology by men) cannot be ruled out, they concluded that the preponderance of women is not an artifact and that there is indeed a sex difference in the frequency of depression.

More recent general population surveys have continued to support this conclusion, showing little evidence that any changes in the social status of women are affecting the phenomenon (but see Kessler and McRae (1981) for an alternative view). Amenson and Lewinsohn (1981) used the Center for Epidemiological Studies Depression scale (CES-D; Radloff, 1977) and psychiatric diagnosis in a general population survey (n=998). They reported prevalence figures of 5.1% for men versus 11.4% for women. Controlling for other associated factors (youth, divorce, low income) did not remove the sex difference. In a British sample of 800 South Londoners, Bebbington et al. (1981) reported one month prevalence rates using the Present State Examination (PSE, see section 3.1) of 6.1% for men and 14.9% for women. They too found no social class effect on the sex difference.

Gove and Tudor, in early and influential reviews (1972a, 1973), suggested that sex differences in mental illness were confined to married people, and that no such differences had been found between men and women who were single, divorced and widowed. They concluded that

> "...in terms of mental illness, ...being married is considerably more advantageous to men than to women, while being single is, if anything, slightly more advantageous to men than to women" (Gove and Tudor, 1983, p43). (The broader implications of the 'specific sex-role theory of mental illness' advanced by Gove and colleagues will be discussed in section 1.3).

Fox (1980) noted that these views were derived mainly from treated mental illness rates and so re-examined the hypothesis in three national

US studies (Gurin, 1960; US Public Health Service, 1970, 1973). He found that in these surveys, women had higher rates of psychiatric morbidity regardless of marital status. Similar results have been reported by Warheit et al. (1976), Cochrane and Stopes-Roe (1981) and Kessler and McRae (1981). Despite this, Gove's hypothesis may find support in a modified form, since although sex differences in the unmarried have been reported, they do tend to be more marked in the married. Bebbington et al. (1981) found PSE case rates which supported Gove's hypothesis, of 18.4% and 2.6% in married women and men respectively, compared with 4.1% and 8.0% in single women and men and 17.8% and 45.5% in the divorced, separated or widowed (although the high male rate here is based on very few cases). Cleary and Mechanic (1983), using a depression scale derived from the Psychiatric Epidemiology Research Interview (PERI; Dohrenwend et al., 1980) in 1026 Wisconsin residents found that women had higher depression scores than men in every marital status, but that this difference was significant only in the married.

Marital status is also highly correlated with the life stage of active childcare, but the two are often not analysed independently. For this reason, mothers of dependent children, compared with fathers, may show particularly high rates. Aneshensel, Frerichs and Clark (1981), in a community survey of 1000 Los Angeles residents, analysed parental status separately, finding significant sex differences only among parents.

A number of authors have therefore been interested in whether women's higher rates of depression and anxiety are related to the social roles they occupy. Jenkins (1985) chose an homogeneous sample of relatively young employed men and women, all entering the Home Office on the Executive Officer grade. Because these men and women were of similar age, education, occupation and

social environment, it was possible examine whether the sex difference remained, suggesting constitutional rather than social role influences. Using the General Health Questionnaire and Clinical Interview Schedule (GHQ and CIS; Goldberg, 1972; Goldberg et al., 1970), she found low rates of disorder of 3.6% for men and 3.0% for women. She concluded that "constitutional factors do not play an important role ... environmental strains are more likely to be of importance". Among these strains she cites unequal financial and other occupational rewards and a differential burden of domestic and child-care responsibilities.

Rosenfield (1980) suggested that the burden of child-care and housework tasks in 'traditional' marriages may contribute to the sex differential in the married. However, Roberts and O'Keefe (1981) found, in their sample of 752 US married couples, that wives reported more depressive symptoms than husbands, irrespective of the division of labour in the household. Inevitably, studies of this type can only partially examine the hypothesis, since women retain the major child-care role even in 'egalitarian' marriages (Perrucci et al., 1978), and families where the father takes the primary child-care workload are rare. The same caveat applies to Radloff's (1975) study, which found that married women were more depressed than married men, even when factors such as age, education, income, employment status, satisfaction with job and marriage, parental status and amount of housework were taken into account. She found no significant relationship between amount of housework and depression. These results led her to examine sex differences in susceptibility to precipitating factors in her sample of 2515 men and women using the CES-D (Radloff, 1981). She found that women were more often exposed to precipitants of depression, but when this increased exposure was controlled statistically, sex differences

remained. This led to the speculation that women are more reactive to precipitants due to a form of learned susceptibility. A similar finding was reported by Dean and Ensel (1983) in their heterogenous New York sample of 1091 respondents, using the CES-D. They found life events had more impact on women than men. Both these studies confirm early findings by Uhlenhuth and Paykel (1973). However, although there are stronger associations between life event stress and depression in women, one must be cautious before interpreting this in terms of greater reactivity or susceptibility, since men and women's event character-istics may also differ (Dean and Ensel, 1983).

Although there is no consensus of explanations, the relatively high risk status of mothers with dependent children seems to be a robust finding. Bebbington et al. (1981) found a PSE case prevalence of 23.4% for mothers with children under 15, irrespective of marital status. Moss and Plewis (1977) in their inner London sample of 180 mothers found 41% and 11% to be suffering moderate and severe levels of mental distress respectively. Richman (1977) studied 99 mothers of children with behavioural problems and 99 controls, finding 39% of the former and 26% of the latter reported either mild or marked psychological distress in the twelve months before interview. Uddenberg and Englesson (1978) found 17% of a sample of 69 Swedish mothers with at least one child aged four years reported current psychiatric symptomatology. McGee et al. (1983) used DSM-III criteria in their sample of 899 New Zealand mothers, reporting a case rate of 18%, although only 8.2% in current treatment. Berg et al. (1984) used the Leeds scale and Malaise Inventory in their Harrogate general practice sample of 240 mothers of children between 2-11 years, estimating a point prevalence of 30%. These rates may be inflated because of the inclusion of mothers who had recently given

birth who may have been suffering post-natal depression. Bromet et al.
(1982) excluded cases of postnatal depression who had no episodes
independent of childbirth. In their semi-rural Pennsylvania sample of
124 mothers with preschool children, they reported one year prevalence
of only 8% using the Schedule for Affective Disorders and Schizophrenia
and Research Diagnostic Criteria (SADS-RDC, Spitzer, Endicott & Robins,
1978).

Working class mothers (referred to in some studies as low income
mothers) are at particularly high risk. Using their own case criteria
based on PSE profiles and the judgment of two psychiatrists, Brown's
group found case rates of 23% of working class women compared with 6% of
middle class women. Bebbington et al. (1981) reported a less striking
difference of 19.6% versus 12.4% for working class and middle class
married women respectively. Fewer of this sample were mothers with
children at home (36% compared with 60% in Brown's survey).

Socio-economic status has in general been found to be associated with
higher rates of psychiatric disorder in general population samples. In
the Mid-town Manhattan study, using the Langner 22-item index of
psychological disorder (Langner, 1962) the percentage of those rated
'psychiatrically impaired' was 19.8, 16.8 and 9.9 of lower class, middle
class and upper class respondents respectively (Srole et al. 1961). In
a comparative study of 33 surveys reporting social status variables,
Dohrenwend and Dohrenwend (1969) found that 28 of them demonstrated more
psychological disturbance in the lowest socio-economic group.

Given the high risk status of these mothers, factors which influence
their mental health are of clinical and theoretical importance. There

has, of course, been substantial research interest in psychosocial stress factors, such as life events and social support deficits. These will be reviewed in Chapter 2. There are also a number of socio-demographic factors which have been examined in relation to mental health variables. One of these, paid employment, is the primary topic of the present study. There has been a great deal of confusion about whether or not paid employment is an influence on mothers' mental health. The existing evidence will be reviewed in the next section. Other socio-demographic factors, which may act independently or in interaction with paid employment, will be considered in 1.3. The importance of attitudes in affecting the relationship between paid employment and well-being is discussed in 1.4. The final section (1.5) gives a summary of the chapter and the research questions which arise from the studies reviewed. The implications for the design of the present study are also examined.

1.2 Paid employment and mental health in mothers

The relatively high rates of minor psychiatric morbidity among married women compared to married men, and high prevalence among mothers in particular, have often been attributed to their lack of paid employment outside the home. One of the most influential theorists has been the sociologist Walter Gove (Gove, 1972; Gove, 1973; Gove and Tudor, 1973), who accounted for the sex related differences in psychological disorder in terms of a number of social role hypotheses. Primary among these was that married women only have one major social role, housewife, whereas men additionally have their occupational role. Thus men generally have an alternative source of gratification should one role be un-

satisfactory. The assumption that housework and child-care are
depressogenic and that paid employment is a mental health benefit to
mothers permeates many articles and books written in the last three
decades (Gavron, 1966; Bernard, 1972). Paid employment outside the
home, it is argued, enhances self-esteem, provides social contacts,
money, relief from the monotony of household chores and from the demands
of young children. The assumption continues to find its way into
reputable texts. Examples can easily be found:

"A major difference between married women and married men is the
probability of being in employment. Although many more women are at
work now than previously there are still fewer women than men in
employment and it is perhaps towards employment that we should be
looking as one of the major determinants of sex differences in
psychopathology." (Cochrane, 1983, p58).

"... it is tempting to hypothesize that the difference between the
sexes in prevalence of minor affective disorders can be largely
accounted for by lower employment rates in married women and the
fact that living with their children seems to expose women to, and
insulate men from these disorders" (Bebbington et al., 1981).

Indeed, having been accustomed to reading articles with introductory
remarks such as "Health surveys have consistently found higher rates of
reported illness among housewives than among employed women" (Nathanson,
1980, p463) it was salutory to undertake with Professor Warr, a
systematic review of paid employment and women's psychological
well-being (Warr and Parry, 1982a; see Appendix A). Although we found
that, like men, single women wage earners have lower rates of disorder

than their unemployed counterparts, we discovered very little empirical evidence for the assumption that employed mothers with dependent children differ in mental health from those who work only within the home. Instead, a more complex picture emerges.

Studies finding no relationship between employment and mental health

There is no doubt that the majority of published studies find no differences between employed and nonemployed groups of married women in general and mothers in particular. Unfortunately for the present purpose, many such studies do not make a distinction between married women with children at home and those without, and although many of the married women studied have children at home, it is often not possible to determine the proportion.

In an early study, Cartwright and Jefferys (1958) found no differences in reported depression, nerves, irritability or sleeplessness in their urban community survey of 215 employed and 309 nonemployed married women aged 16 to 54. Hare and Shaw (1965) examined self reported symptoms of neurosis, depression, anxiety, fatigue and dizziness in 736 married women and similarly found no significant associations between employment status and symptomatology. Radloff (1975), in a study already introduced, found no significant difference in CES-D scores between 381 employed and 413 non-employed married women. Campbell, Converse and Rogers (1976) used an overall life satisfaction item and eight general affect scales in their national household survey of 291 employed and 445 nonemployed American married women, finding no differences between the groups. Brown and Harris (1978) had a mixed sample of 458 women, but since only 17% were single, the study should be mentioned here. They

found that overall, paid employment did not significantly reduce the rate of depression onset at 6% of employed versus 12% nonemployed women. Finlay-Jones and Burvill (1979) reported no employment status differences on the GHQ-60 for the married women in their general population Australian sample of 875 women, nor for 1988 general practice attenders. Newberry, Weissman and Myers (1979) used several measures of depressive symptoms in 51 employed married women and 51 nonemployed controls, but found almost identical scores. The two groups were also very similar using diagnostic criteria on the SADS. The employed married women sampled by Cochrane and Stopes-Roe (1980) in their study of 109 British women aged 20 to 60 were not significantly different from their nonemployed counterparts on the 22 item Langner scale. Rosenfield (1980) examined a small subsample (n=30) of her urban sample to compare employed and nonemployed married women on a depression scale. The nonemployed had slightly higher scores, but these were not significantly different from the employed mothers'. Brown and Prudo (1981) reported data from a Hebridean sample of 355 women, of whom 65% had children living at home. Paid employment was not associated with depression onset, nor was it significant in interaction with other factors such as life event stress. Amenson and Lewinsohn (1981) found a relationship between employment and mental health only for men and single women in a heterogeneous sample of 998 respondents, using CES-D and psychiatric diagnosis. Nonemployed homemakers were no more depressed than their employed counterparts. Roberts and O'Keefe (1981) reported no relationship between employment status and psychological distress in their sample of 752 married women. Cleary and Mechanic (1983) used a depression scale derived from the PERI in their representative sample of 1026 Wisconsin residents, finding nonsignificantly higher scores in the nonemployed married women compared to the employed. Ross, Mirowsky and

Huber (1983) used random digit dialling in their telephone survey of 680 married women and their husbands. Using a modified form of the CES-D, they found a nonsignificant correlation between employment and depression. Most recently, Krause and Markides (1985) factor analysed the CES-D and used four separate subscales of depression, positive affect, somatic/retarded symptoms and interpersonal difficulties, in their Mexican American sample of 450 women. When age, income, education, health and the presence of young children were controlled for, employment was not associated with any of these subscales for married women.

In addition to these studies of married women, a number of studies have sampled mothers in particular, or have reported the results of analyses for mothers. As we found for the studies reviewed above, the majority of these also find no differences between employed and nonemployed mothers on a range of mental health measures.

Feld (1963) reported no differences on a summary measure of psychological disturbance between full-time employed mothers and nonemployed mothers in an analysis of 438 white respondents from a representative sample of American adults. Sharp and Nye (1963) used a ten item scale of anxiety symptoms in a postal questionnaire to mothers in three small US towns, finding almost identical responses from full-time employed, part-time employed and nonemployed women. Nye (1963) found self reported satisfaction scores in the same sample to be unrelated to paid employment status for all aspects of life except 'daily work', where mothers employed part-time were most satisfied. Ferree (1976) reported the percentage of mothers who were 'dissatisfied' in her sample of 135 working-class women with young (but not preschool)

children. Again, there was a tendency for fewer part-time employed women to be dissatisfied, although there were no significant differences overall. Gove and Geerken (1977) report a comparison between employed and nonemployed mothers on psychological symptoms (e.g. 'feeling anxious', 'feeling nothing is worthwhile'), finding no significant differences. Moss and Plewis (1977) interviewed 180 mothers of preschool children using standardised ratings of psychological distress, finding no significant relationship with weekly hours of paid employment for the sample as a whole. Welsh and Booth (1977) used the Langner 22 item index in a stratified probability sample of 491 Canadian mothers under 45. There were, overall, no statistically significant differences between employment status groups, although a nonsignificant trend ($p < 0.1$) for women who were employed part-time or full time for over one year to have lower scores than the nonemployed group. It appeared that there was a stronger association between employment status and Langner scores in the working-class group, but this was not formally tested. Walker and Walker (1980) examined trait anxiety in 272 mothers, finding no significant relationship with employment status. Aneshensel, Frerichs and Clark (1981) found that employed mothers and full-time homemakers did not differ in CES-D depression in their sample of 1000 Los Angeles residents. Stewart and Salt (1981), in a sample of 122 middle-class women, found no significant difference in Zung scores between career mothers and nonemployed mothers. Radloff (1981) used the CES-D in her study of 280 women, analysing mothers' scores showed no relationship to employment status. McGee et al. (1983) also found no relationship between employment status and depression scores (based on DSM-III items and Rutter's malaise inventory) in their sample of 899 New Zealand mothers. Shehan (1984) found no differences in self reported depression or life satisfaction between 50 mothers of preschool children

in full-time clerical jobs and 50 nonemployed mothers whom they knew.

The lack of employment related effects in these studies is striking, but requires further examination. Peter Warr and I thought it unlikely that, for women in general, a single factor would account for the findings. Instead, we postulated a conceptual framework which took into account the context in which the employment was undertaken. We suggested (see Appendix A) that the relationship between employment and mental health would be moderated by the woman's level of occupational commitment and the quality of her occupational and non-occupational environments. For mothers caring for dependent children, compared to single wage earners without children, the overall level of commitment will be (for many, temporarily) reduced. However, it is quite possible that within the group of mothers, subtle local effects are masked by global comparisons. There are hints, for example, that a stronger association may be found in working-class samples. There is also a possibility that the relationship between employment and mental health is reversed in the presence of a third variable. Although not yet systematically investigated, this cannot be discounted. If employment were related to mental health in one subgroup of mothers but inversely related in another, no significant difference may be found overall.

Studies reporting a relationship between employment and mental health

Although the majority of studies fail to reject the null hypothesis, there are a few which have reported associations between paid employment and mental health variables. These repay careful examination, since they may give an indication of possible moderating influences.

Kessler and McRae (1982) studied 532 married women whose husbands were employed, excluding women who were temporarily nonemployed or retired. They used the Gurin (1960) 20 item scale which measures bodily feelings associated with depression and anxiety, and shortened versions of Rosenberg's (1965) self-esteem and the Zung self-rated depression scale. When they examined the relationship of employment to these variables, they found, for the sample as a whole, regression coefficients of -.23 for depression, -.25 for the Gurin scale and -.32 for low self-esteem (p< .05 in each case), net of husband's income, respondent's age and number and ages of children. However, analysis of the interaction of employment status with parental status showed that the relationship was consistently weaker for mothers. Furthermore, when the employment 'effects' were decomposed in terms of the extent to which employed women report satisfaction with their jobs, a significant benefit was confined to those who were 'very satisfied'. Those reporting job dissatisfaction showed greater distress than the nonemployed.

D'Arcy and Siddique (1984) used the 30 item GHQ in a sample of 417 Canadian mothers with a mean age of 40 (implying that a number of them no longer had children at home). They found a weak association between employment and GHQ score (-.08), mainly confined to the 'anergia' subscale. No analyses which examine the interaction of employment with social class, age of children or social support are reported.

Briscoe (1982) reported mixed findings in her sample of 274 married women under 60, taken from a larger random sample. She used the General Health Questionnaire, Bradburn's (1969) Positive and Negative Affect Scales and self reported satisfaction. The 157 employed women were equally divided between those employed more and fewer than 30 hours a week. She found

that the housewives reported significantly more symptoms on the GHQ than the employed women, although they were of no greater severity. There were no significant differences with regard to anxiety, avowed happiness, self reported success or positive affect. The nonemployed wives had significantly greater negative affect scores and were less satisfied with their past lives and their domestic role. Unfortunately for the present discussion, Briscoe does not examine the scores of mothers separately, nor does she control for the effect of social class or ages and number of children. She does mention, however, that the full-time homemakers were more likely to live in households with children under the age of 16 and considerably more likely to have children under school age. For example, of the nonemployed women, 41% had a child under 5 years, compared with 15% of the employed wives. The effects of employment are therefore considerably confounded with other socio-demographic factors in this study. This is, of course, a universal problem with surveys of heterogeneous samples of women, since employment is inevitably correlated with life stage, ages of children and perhaps with other important variables such as life stress and social support.

Mixed findings are reported by Cochrane and Stopes-Roe from their random sample of 109 British women aged 20-60. No significant differences were observed between employment status groups on the Langner scale (Cochane and Stopes-Roe, 1980), but a significant difference did emerge using a different measure, a 30 item symptom checklist (Cochrane and Stopes-Roe, 1981). This difference was more modest for married women compared to the unmarried, and was confined to the depression subscale.

Bebbington et al. (1981) report an overall effect of paid employment for the women in their Camberwell survey. Of 169 women, 72 were employed full time, 38 part time and 59 were not employed. The weighted proportions of PSE cases were 10%, 8% and 25% respectively (p<.025), although these proportions were not examined for mothers separately. Mothers were, as we have already seen, more likely to be cases irrespective of employment status in this survey, but they also had the lowest employment rates. From a further analysis kindly supplied to us by Dr. Bebbington (Warr and Parry, 1982a: Appendix A), it was possible to discover that there was a significant difference between employment status groups only for working-class women.

An association between employment and mental health in only a subgroup of women was also found by Brown and Harris (1978). Although, as already mentioned, the difference between employed and nonemployed case rates was not statistically significant for the sample as a whole, there was an effect among those women who were at high risk of depression by virtue of having suffered a stressful life event, _and_ who lacked a confiding relationship, or had lost their mother in childhood, or had three or more children at home. Here the proportion of onset depression cases in employed and nonemployed groups were 13% and 30% respectively (p<.05). As we note that it is by and large the working-class women who were vulnerable in these respects, Professor Brown kindly made available an unpublished analysis breaking down case rates for employed and nonemployed women in the working-class and middle-class separately. This demonstrated the same pattern as the Bebbington result above, showing that the differences were found only within the working-class group (Warr and Parry, 1982a).

There is other evidence that paid employment status effects, where they occur, are confined to working-class mothers. Hall, Williams and Greenberg (1985) took a convenience sample of 111 low income mothers from a larger group of women who had participated in another study. It was found that employed mothers had lower CES-D scores than nonemployed. No details are given about how 'employment' is defined. They do not report whether the employment effect is modified by life stress or social support. Warr and Parry (1982b: Appendix B) found, in a sample of working-class married women with children under 14, that full-time employed mothers had lower depression scores than part-time employed or nonemployed mothers using a short form of the Zung scale. In a largely working-class sample of British born women, Cochrane and Stopes-Roe (1981b) reported higher Langner scores for a heterogeneous group of nonemployed. Specific comparisons for mothers are not reported.

Roberts, Roberts and Stevenson (1982) examined employment in interaction with other psychosocial factors in their probability sample of 1710 Californian women using postal survey methods. They used their own measure of depressive symptomatology which they construed as 'non-specific psychological distress'. They found employment to be significantly associated with distress in married women, but did not analyse the results for mothers separately. The difference in distress scores was confined to those with low levels of social contact. However, when age, income and education were entered as co-variates, the employment effect disappeared. They note that employment itself did not seem to act to reduce social isolation, as the two variables were not correlated in this study.

Thus there is patchy evidence to suggest that paid employment, however

elusive its effects, may be important for working-class mothers or those vulnerable by virtue of other social stress. We have also seen how research designs are often built around randomly drawn samples of women, heterogeneous for ages and number of children, social class, marital status, life stage, race and parental status. Global comparisons are then made between employed and nonemployed groups. Often crucial variables are highly correlated so that, in effect, paid employment becomes almost a 'proxy variable', for example, of life stage. In this situation, there is only a limited usefulness of statistical techniques, such as hierarchical multiple regression, which attempt to estimate the independent contribution of employment. Furthermore, the heterogeneity of the sample can mask the 'hidden' effect of other factors, such as postnatal depression, which may be contributing to the variance in minor psychiatric morbidity. The present study attempts the task of disentangling paid employment from these other sources of variance and examining them independently and in interaction.

A number of specific research questions arise from the studies reviewed in this section:

Q1. Will an overall relationship between paid employment and mental health measures be found in a sample of working class mothers?

Q2. Is paid employment associated with mental health measures only among those mothers who are particularly at risk by virtue of poor social support or having recently suffered severe life event stress?

Q3. Are any associations found between paid employment and mental health net of age and difficulties with money, housing and childcare?

The research design adopted to address these questions is outlined in section 1.5.

1.3 Other social variables associated with mothers' mental health

Further sociodemographic variables which may be directly associated with affective disorder in mothers concerns the age or number of children, and marital status. This section considers to what extent these have effects independent of paid employment status.

A number of authors have suggested that mothers who are caring for one or more preschool children are at risk compared with those with older children (Hobbs, 1965). Brown and Harris (1978) found particularly high rates of depression onset among working-class mothers with children under six years compared to mothers of older children (p152). Moss and Plewis (1977), in their study of mothers of pre-school children already described, also found high rates, although they had no comparison group of mothers with older children. Some authors have suggested that caring for preschool children is a form of chronic stress (Richman, 1976). For example, Gavron (1966) writes of the pressure of the child's needs, a relatively isolated existence, and not much chance to relax or find stimulation outside the home. Lopata (1971) points out the uncertainty surrounding the 'correct' way to bring up children. Lacking previous experience, a young mother can find herself anxious and self-doubting about her role. However, other studies have failed to find higher rates of depression or anxiety in mothers of preschool children. In the sample of mothers (already described) studied by D'Arcy and Siddique (1984), 32%

had preschool children. There were no differences in GHQ total or subscale

scores between these mothers and the rest, although there were significant

statistical interactions between having a preschool child and husband's

support in predicting some GHQ subscale scores. Mothers with preschool

children and low support were more depressed and anergic. The interaction

was not significant for the anxiety items of the GHQ. Krause (1984) also

found no effect of preschool children in his telephone survey, using the

CES-D subscales, already mentioned.

Where higher rates of depression are found in mothers of preschool

children, the effects of childbirth itself may be partly responsible. The

rate of depression in a general practice sample was found to be five times

higher in the three months following delivery than during pregnancy (Ryle,

1961; but note that this relative risk may be partly due to low rates

during pregnancy itself). Jacobsen, Kaij and Nillson (1965) found, using

a postal questionnaire, that 25% of their sample still reported six or

more symptoms one year following childbirth.

A relationship of depression with the number of children is not usually found.

In fact, age (highly correlated with parity) tends to be inversely associated

with depression (Dean and Ensel, 1983). Ross, Mirowsky and Huber (1983) also

tested for a relationship between number of children and depression in their

study (q.v.) using the CES-D, but found none. Surtees (1984) reports a

relationship of number of children with RDC case rate in 576 Edinburgh

women between 18 and 65. However, this was not examined for the subgroup

of mothers separately and so may be an indirect effect of parental status.

Although finding no effect of parity overall, Brown and Harris (1978)

reported stronger associations between life stress and depression onset

for mothers with more than three children under the age of 14 living at home.

Some studies have found that marital status is related to depression among mothers, with single mothers at the highest risk. Colletta (1983) studied a sample of 75 teenage mothers, finding that single women aged 14 to 17 with little education had the highest CES-D scores. McGee et al. (1983) found that separation from the child's father before he or she was seven years old was correlated with depression in their sample of New Zealand mothers. Single parenthood at the time of interview, however, was not. Surtees (1984) reported higher case rates for RDC disorders for single parents. Pearlin and Johnson (1977), in a study of 2300 Chicago residents, found that single parents had significantly higher scores on an eleven symptom measure of depression (Derogatis et al., 1971). This study also measured "structured, persistent life strains"; economic resources, isolation from social networks and parental responsibilities. They found that the unmarried were in general both more exposed and more vulnerable to economic hardship and that absence of a spouse was much more likely to be associated with depression when there is isolation from other social networks as well. They infer from their results that parental burdens are more onerous for the unmarried, and that among the single parents, those with fewest children had lower depression scores. These results suggest that for single mothers the concommitant economic strain and social isolation may be major influences on mental health status, although the alternative hypothesis, that multiple pregnancy when unmarried could be directly linked to depression, cannot be ruled out.

Two further research questions arise from the findings reviewed in this section:

Q4. Is the care of a preschool child associated with lower mental health scores?

Q5. Do single mothers have lower mental health scores than married mothers?

1.4 Sex role beliefs, work attitudes and employment

Previous sections have examined sociodemographic factors which are likely to be associated with mental health in mothers, and which may affect whether or not paid employment is. Researchers are also becoming aware of the importance of the individual's attitudes, although such variables have been neglected in the past. As Shehan (1984) points out, formulations such as Gove's (1972) sex-role specific theory of mental illness leave the mother's rational choice entirely out of account. Paid employment is seen as acting upon the mother, irrespective of her expectancies, personal preference, sex role beliefs, job and domestic role satisfaction or the perceived conflict between the two. Indications that these moderate the relationship between employment and well-being can be found in a number of studies which will be reviewed here.

Ross, Mirowsky and Huber (1983), in the study already introduced, found a significant interaction between employment preference and employment status in married women in predicting CES-D scores using multiple regression, although employment itself was not significant. Those mothers whose employment status was consistent with their preference had the lowest scores. Walters and McKenry (1985) studied a convenience sample of

72 urban and 165 rural Ohio mothers in paid employment, predominantly in low skill occupations. They found that from a range of variables including social support, only one was associated with life satisfaction in both groups of mothers. This was whether or not the mother had, before marriage, expected to be employed outside the home. Those who had expected not to do so had lower satisfaction scores. Mothers' personal preference whether or not to be employed outside the home may be related to sex role beliefs, that is, her view about what are appropriate roles and behaviours for women and men.

Sex role attitudes have, in general, been found to be more traditional among working-class compared to middle-class women (Gaskell, 1975). It has also been reported that sex role attitudes are more traditional among nonemployed than employed women. Molm (1978) investigated a cohort of 846 women of approximately 30 years of age from a national US sample. The sample was originally derived from high school sophomores, and was predominantly middle-class. Employed women had significantly more liberal sex role attitudes although the magnitude of the effect was modest. Ferree (1980), in a sample of 135 working-class mothers, found that employed women were substantially more liberal than full-time homemakers. even after controlling for demographic differences between the two groups. In this respect, part-time employed mothers were much more like full-time employees than they were like the homemakers. Stafford (1984) also found this relationship between employment and attitudes, using the Attitudes to Women Scale (Spence and Helmreich, 1972) in a middle-class sample of women, most under 40. In addition to employment being associated with more liberal attitudes, women whose employment status is discordant with their sex role attitude may have lower mental health scores. Stafford (1984) found that occupational congruence was significantly related to

self-esteem, representing a significant interaction between present and preferred occupational status in predicting self-esteem scores.

Krause (1982) argued that it is not sex role orientations in themselves which moderate employment/health relationships, but whether there is a conflict of expectations between the woman and her spouse. To test this, Krause (1984) used a measure of sex role expectations derived from items used by Motz (1952) and Brogan and Kutner (1976). Data on the women's attitudes were not reported, nor were the husbands' attitudes measured. Instead, the wife was asked for her perception of her husband's attitudes, and from this a 'conflict' score calculated. The perceived conflict measure correlated with CES-D scores for nonemployed women, but not for the employed group. Krause goes on to argue that, since this also correlates with her childcare role dissatisfaction, "conflicting sex role expectations contribute indirectly to psychological distress among housewives by increasing the likelihood that they will become dissatisfied with childcare". This seems to me to be an over-interpretation of correlational data, since there is no way to rule out competing explanations. For example, the woman's perception of sex role conflicts may be tapping marital conflict in general, and the direction of the relationship between marital dissatisfaction, childcare dissatisfaction and psychological distress is not easily ascertained. Krause's assertion that it is conflict, not the mother's attitude, which is important is not consistent with evidence from his study of Mexican American women already described. Krause and Markides (1985) found that sex role beliefs moderated the relationship between employment and positive affect in this sample. The women with traditional sex role attitudes who were employed and those with liberal attitudes who were nonemployed had the lowest

positive affect scores. This result did not hold true for the divorced or separated women, however.

Kessler and McRae's (1982) study, already mentioned, did not include a measure of sex role attitude. They did point out, however, that the relationship between employment and mental health was stronger for older, working-class women rather than young, middle-class women. Since they would have expected the former group to have more traditional sex role attitudes than the latter, they find no evidence for the predicted moderating influence of sex role beliefs. However, the lack of a sex role measure and the use of proxy variables limit the inferences which can be drawn here.

Given these sparse and equivocal findings, it seemed important to include a measure of sex role attitudes in the present study to test if employment/ health relationships are found only for the subgroup of women whose sex role beliefs are consistent with their employment status.

Research questions concerning mothers sex role beliefs can be listed here:

Q6. Do employed mothers have more liberal sex role attitudes than nonemployed mothers?

Q7. Is there a significant interaction between sex role attitudes and employment status in relation to mental health (i.e. do those mothers whose employment status is concordant with their sex role beliefs have better mental health scores)?

Job satisfaction and satisfaction with childcare and homemaker roles are further variables which have received some, but not much, attention. Kessler and McRae (1982) measured job satisfaction, housework satisfaction and work (i.e. job)/family conflict in 493 married women, albeit with a single question in each domain rather than a multi-item measure with known psychometric properties. They found that there were stronger relationships between employment and health among women who reported that they 'liked' their housework role. As already mentioned, high job satisfaction moderated the relationship between employment and health in this study, as did reported conflict between home and job commitments.

Cleary and Mechanic (1983) report relevant data from their sample of 1026 Wisconsin residents, where they studied 181 employed married women and 149 full-time homemakers. Their measures of parental satisfaction, job satisfaction and homemaker satisfaction consisted of three, four and three questions respectively. The two groups of women were almost identical in their reported satisfaction with the homemaker and parental roles. However, the relationship between homemaker role satisfaction and depression was stronger for nonemployed than employed women. Interestingly, the reverse was true for the relationship between parental satisfaction and depression, which was stronger in the employed group. These relationships were not statistically significant. However, parental satisfaction was significantly correlated with depression in the employed group. They conclude that although the homemaker role is more salient for nonemployed women, the employed mothers seemed to be especially affected by the strains of child-rearing. We must be cautious in accepting this conclusion as it stands, however. It is possible that 'child-rearing strains' were of a different nature for the employed women, since it is highly likely that they were, as a group, older and would have older

children. Two of the items in the three item measure of parental
satisfaction seem differentially sensitive to the strains of parenting
adolescents; "how satisfied are you with the way your children are
turning out?" and "how satisfied are you with the respect your children
show you?". It is therefore unfortunate that no details are given of the
differences in age and age of children between employed and nonemployed
groups which could rule out this possibility.

These results suggest that good measures of homemaker satisfaction, job
satisfaction and role conflict are needed in the present study in order to
investigate whether these act to moderate employment/health relationships
in working-class mothers of young children. The research questions which
arise include:

Q8. Do employed mothers express more satisfaction with their domestic
role than nonemployed mothers?

Q9. Among employed mothers, is job satisfaction and the conflict between
home and employment roles associated with mental health?

1.5 Summary and research questions

Mothers of young children, and in particular working-class mothers, are at
a relatively high risk of psychiatric disorder. There have been
conflicting reports about whether or not paid employment is beneficial to
their mental health. Some authors attribute, at least partly, higher
rates of disorder in this group to their lack of paid employment, but the
majority of empirical studies find no difference between employed and

nonemployed groups of mothers on a range of mental health variables. On the other hand, it is probable that any effects of paid employment in itself are complexly related to other social factors influencing the mother's mental health and moderated by her own attitudes to employment and domestic roles. There are indications that employment may benefit particular groups of mothers, (for example, working- class mothers, those vulnerable to mental health problems by virtue of life event stress or social support deficits) and that this benefit may depend on the mother's own attitudes (for example, liberal sex role attitudes, job satisfaction and low perceived conflict between home and employment roles).

Studies using random, heterogeneous samples of women inevitably find it difficult to estimate the independent contribution of paid employment to mental health in mothers since it is normally confounded with other crucial differences between them, in particular, ages of children, levels of social support and life event stress.

In order to avoid the lack of focus associated with heterogenous samples, it was decided to study a population of mothers who were relatively similar in life stage, all having the care of dependent children. The mothers in the present sample were characterised by having at least one child between the ages of 4 and 7. It was decided to exclude mothers who had a baby under 18 months of age in order to avoid specifically post-natal depressions and to clarify the effects of preschool children rather than young infants. The present study approaches the problem of disentangling employment from other social factors by screening the total population and selecting respondents to ensure that there are approximately equal numbers of mothers in each cell of a 2x2x2x2 analysis of variance design. The four variables which were used for screening the

sample were: a) whether or not the mother was in stable employment, b) whether or not she had a preschool child, c) whether she scored above or below the median on a measure of social support, and d) whether or not she had suffered a severely threatening life event in the twelve months before interview. This procedure weights the sample so that there are adequate numbers of mothers with relatively uncommon combinations of variables for model testing. In particular, it enables the relationship of paid employment to mental health to be examined at different levels of social stress and the independent effect of the presence or absence of preschool children to be examined.

It is now possible to draw together all the research questions arising from the studies reviewed in this chapter.

Q1. Will an overall relationship between paid employment and mental health be found in this sample of working-class mothers?

Q2. Is paid employment associated with mental health measures only in those mothers who are particularly at risk by virtue of poor social support or having recently suffered severe life event stress?

Q3. Are any associations found between paid employment and mental health net of age and difficulties with money, housing and childcare?

Q4. Is the care of a preschool child associated with lower mental health scores?

Q5. Do single mothers have lower mental health scores than married mothers?

Q6. Do employed mothers have more liberal sex role attitudes than nonemployed mothers?

Q7. Is there a significant interaction between sex role attitudes and employment status in relation to mental health (i.e. do those mothers whose employment status is concordant with their sex role beliefs have better mental health scores)?

Q8. Do employed mothers express more satisfaction with their domestic role than nonemployed mothers?

Q9. Among employed mothers, is job satisfaction and the conflict between home and employment roles associated with mental health?

Questions 1 to 5 will be addressed in Chapter Six, questions 6 to 9 in Chapter Seven.

CHAPTER TWO: SOCIAL STRESS AND MENTAL HEALTH

2.1 Life event stress

The major focus of psychiatric epidemiology in the past two decades has been the influence of the social environment on mental health, and in particular the role of stressful life events in precipitating depression. Research into stressful life experiences was in part undertaken in order to account for the higher prevalence of minor psychiatric morbidity among working-class samples (Dohrenwend and Dohrenwend, 1969; Brown et al., 1975).

The field is characterised by a diversity of methods and measures. Typically, epidemiological approaches adopt a psychiatric case identification procedure (i.e. a 'case/not case' dichotomy) and examine stressful life events in terms of particular characteristics (e.g. 'marked threat', 'exits from social field', 'undesirable change'). In contrast, checklist methods of life stress assessment led to studies where a global 'life change' variable was obtained by summing a number of self report items. Mental health variables were derived from questionnaire rather than interview in these studies, leading to continuously distributed measures. Correlational data analytic methods were used in normal populations, often convenience samples such as college students or large samples using postal questionnaires. Because of these parallel methodologies, life events research is an extremely heterogenous field of studies using different conceptual assumptions, methods, measures and forms of data analysis (Dohrenwend and Dohrenwend,

1974). The present review tends to favour epidemiological research because checklist measures of life event stress have serious methodological shortcomings (see 3.2)

The primary goal of the present research was to examine the research questions outlined in Chapter One. However, to test the hypothesis that paid employment will be associated with mental health in mothers who are in adverse social circumstances, measures of life event stress and social support were also needed. It therefore became possible to make a subsidiary contribution to the research on life event stress. This chapter will attempt to clarify the extent and limits of this contribution. I shall selectively review some of the major issues, then outline the research questions which can be addressed given the design of the present study.

Life event history of depressed patients vs controls

Studies which compare recent life events experienced by depressed patients compared to nondepressed controls suggest that life stress can bring about depressive episodes. Lloyd (1980) reviewed eight such studies, finding five of them demonstrated an excess of events among depressed patients, particularly in the recent past (Paykel et al., 1969; Thompson and Hendrie, 1972; Brown et al., 1973; Paykel et al., 1975; Paykel and Tanner, 1976). For example, Paykel et al. (1969) compared 185 depressed patients from outpatient clinics, day hospital, emergency and inpatient units, with 185 community controls matched for sex, age, marital status, race and social class. Using a semistructured interview after symptoms began to improve, the patients' life event history was reconstructed for six months before depression onset (or six

months before interview for the controls). They found that depressed patients had three times as many events as controls. The events which were more frequent for the patients were death, serious illness or departure from household of immediate family member, serious personal illness, marital arguments and separations, and change in work type or conditions. Thus exits from the social field and undesirable events in general were specifically preponderant in the depressed group.

Brown and his colleagues (1973) reported a comparison of 114 depressed women (73 inpatients and 41 outpatients) with 152 community women, using an early form of the London Events and Difficulties Schedule (LEDS; see 3.2). There was evidence of a higher rate of life events for the depressed group in the three weeks before onset, but not for other time periods. However, when events rated of 'marked threat' were examined separately, 42% of the depressed patients had such an event in the year before onset compared to 9% of the general population in the year before interview. Surtees and Rennie (1982) reanalysed these data using a continuously distributed 'life stress adversity' variable, where life event threat scores were weighted and summed according to a stress dissipation model (Surtees & Ingham, 1980). This suggested that adversity scores for the depressed group rose steadily in the weeks prior to onset, compared to the community group where scores remained stable.

The three studies in Lloyd's (1980) review which did not report greater life event stress in patient samples (Forrest et al., 1965; Cadoret et al., 1972; Hudgens et al., 1967) differed from the other five in methodology; they measured events over a much longer time period (up to three years with some lifetime event items) with restricted life event

checklists and medical rather than general population control groups.

An excess of life events in depressed patients, of course, only <u>suggests</u> a precipitating role of stressful events; it does not establish a causal link. Consensus on the causal role of life events has not yet been achieved, partly because the methodological difficulties in this field lead to results which can be interpreted in favour of a causal link, but can also be questioned by sceptical authors (see for example, Tennant, Bebbington & Hurry, 1981). Although an in-depth review is not possible here, I shall summarise the methodological issues which have been raised, and consider briefly some of the evidence for each point separately in order to arrive at a reasoned estimate of the role of life event stress in influencing the mental health of the working-class mothers in the present sample.

The following points have been mentioned as reasons to be cautious in making causal interpretations of the life event/depression association:

a) In studies of depressed patients vs controls, life events could be influencing 'illness behaviour' and referral to health services rather than depression itself.

b) Depressed people could systematically recall more negative events and report them more negatively than nondepressed, so that measurement instruments are distorted in favour of the hypothesis.

c) Depression onset rarely occurs at a discrete point in time, so that in the prodromal phase of insidious onset, depressed people could cause events to happen to them (e.g. poor work performance could

lead to demotion or dismissal; depressed behaviour could lead
to marital separation, etc.).

d) Life event stress has been found to be a general risk factor for a
    range of psychiatric and physical ailments including schizophrenia,
    anxiety, complications of pregnancy, psychosomatic complaints, and
    myocardial infarct. It is therefore unlikely to have a specific
    role in causing depression onset.

e) The magnitude of the effect of life event stress on depression,
    whilst statistically significant, may be only modest or, in some
    cases, trivial. A number of people develop depression in the absence
    of a life event and many suffer severe stress without becoming
    depressed.

f) By definition, 'threatening' or 'upsetting' events are those which
    cause distress. In community studies many of the identified 'cases'
    may be transient mood disorders or sub-clinical dysphoric states
    reactive to the event rather than 'true' cases of affective disorder.

g) Most of the published studies of life event stress are
    retrospective, and evidence from prospective studies has so far been
    disappointing.

Help seeking or depression in the community?

Studies comparing patient samples with general population controls are
open to the interpretation that help-seeking rather than depression is
triggered by life event stress. An interesting study in this regard

examined matched consulters and non-consulters (n=34x2) to General
Practitioners (Miller, Ingham and Davidson, 1976). Consulters
experienced more threatening life events. In the combined sample,
events were associated with psychological rather than physical symptoms.
Non-threatening events showed virtually no significant relationships to
other variables, suggesting a stress threshold. People with few casual
friends had more symptoms. The authors interpret these findings as
suggesting those who have a threatening life event, especially those
with few casual friends, have more symptoms and are more likely to seek
medical help.

General population surveys which adopt a standardised case
identification procedure are, of course, independent of help-seeking,
since most of the depressed cases will either not have sought or not
have been referred for psychiatric treatment. Such studies also report
an association between life events and psychiatric case status (Myers,
Lindenthal and Pepper, 1972; Brown and Harris, 1978; Bebbington et al.,
1984). For example, Brown and Harris (1978) found in their Camberwell
samples (n=419, chronic cases excluded) that 20% of women with a
severely threatening life event or major difficulty had a depression
onset, compared to only 2% of those without. The effect was most marked
among working-class women with children at home, where the comparable
figures are 31% and 1%. Bebbington et al. (1984) report a similar,
highly significant association between life events and chronic
difficulties in working-class women but not middle-class women.
Costello (1982) interviewed 449 Canadian women, examining life events
and difficulties separately. He reported depression case rates (using
PSE case criterion with ID 6) of 37% with and 5% without a severe life
event and 16% with vs 6% without a major difficulty.

Measures of life event stress are distorted by depressive recall

A number of authors have expressed the misgiving that all life events measures are sensitive to differential recall of negative events by depressed and non-depressed people (Tennant et al., 1981; Beck and Harrison, 1982). The latter authors suggest that depressed individuals will inevitably exaggerate the negative aspects of their life experience in recall tasks. It was in response to such concerns that Brown's group developed contextual rating of life event stress following a searching interview where a complete life event history for the previous year is obtained (see 3.2). There is reason to believe that self report checklists of events are more open to depressive bias, given the vague and ambiguous items, than this interview procedure (Paykel, 1983, see also 3.2).

Brown et al. (1973) found concordances of 79% between depressed patients and informants on whether or not an event had taken place. In a more recent study (1978) of depressed patients, concordance of 78% was obtained, reaching 91% for severely threatening events. The agreement between contextual threat and respondents' own ratings of threat was lower in the depressed sample than the general population sample - 84% and 95% respectively - suggesting that the procedure is successful in reducing bias due to 'depressive' recall (Brown and Harris, 1978, p114).

It remains possible that some mood effects remain in the way context is presented to the interviewer and hence to the raters, or that an empathic interviewer could unconsciously exaggerate the stressfulness of the circumstances, knowing the respondent became ill following them. This

can be examined to some extent in the present study. If such a process
is occurring, it should affect the interviewer (who spends a
considerable time with the respondent) more than the raters, who are
judging an event on the basis of a brief written outline only. The rater
who interviewed the respondent would therefore tend to have lower
concordance with the two other raters than they would with each other.
This hypothesis is examined in 5.2. (see p116)

Psychiatric disorder could be a cause of life events

Many studies of life events do not draw the distinction between chronic
and onset 'cases' of psychiatric disorder. Even though some do attempt
to do this, there is no reason to believe such a retrospective dating of
onset is valid or reliable, given the insidious nature of the onset of
many episodes of minor psychiatric disorder. This leaves open the
possibility in all retrospective studies that individuals' symptoms
predate the life event and that a proportion of events are caused by
their own behaviour.

There are a number of reasons for thinking that this process, although
it probably exists, cannot account for the association between life
stress and depression. First, studies of depressed patients suggest
that they have an excess of bereavements in the six months prior to
admission compared to the general population, which is not a type of
event under the control of the patient (Parkes, 1964; Briscoe and Smith,
1975; Birtchnell, 1970; but see also Frost and Clayton, 1977). Second,
when only those life events rated either 'logically independent' of the
respondent's behaviour or 'uncontrollable' are considered, the
association with depression remains (Paykel et al., 1969; Brown and

Harris, 1978; Grant et al., 1981). Third, a study by Tennant and Andrews (1978b) matched (on sex, marital status, social status and age) a sample of 150 high GHQ subjects from a community survey with a low scoring group of equivalent life event stress. A separate panel of normal subjects rated each life event item on whether it was likely to be caused by chance, self or others. They found the proportion of events rated in each of these three categories to be almost identical in the high and low GHQ groups. These results provide no evidence that people suffering depression and anxiety have a different, more self-induced, pattern of life events.

Is there evidence of a specific link with depression?

Life event stress has been implicated in a wide variety of disorders, both physical and psychological. There are, for example, reports of an association with schizophrenia (Rabkin, 1980), psychosomatic disorders (Rabkin & Struening, 1976), complications of pregnancy (Nuckolls et al., 1972) and myocardial infarct (Theorell et al. 1975). In fact Cassel (1976) in an early conceptual paper, implied that to expect specific effects was part of a common misunderstanding of the nature of the stress response. He argued that stressors in themselves are not equivalent to disease agents, but by altering the endocrine balance in the body, act to increase the susceptibility of the organism to a range of direct noxious stimulii:

"Viewed in this light, it is most unlikely that any given psychosocial process or stressor will be etiologically specific for any given disease." (Cassel, 1976, p109).

Thus, those exposed to stress will be more likely to become ill, but the form that illness takes may be determined by other factors.

Lloyd (1980) reviews studies comparing the rate of life event stress in depressed vs schizophrenic samples, concluding that there was a consistently stronger association between life stress and unipolar depression than schizophrenia. Community surveys have often examined depression separately from other psychiatric conditions, although it is in the nature of minor psychiatric morbidity in the community that the majority of identified cases are depressed, but that many have a significant anxiety component. For these reasons, Dohrenwend et al. (1980) have used the terms 'non-specific psychological distress' and 'demoralisation' for the type of disorder commonly found in community surveys where, they argue, traditional psychiatric categories are less appropriate. Very few cases of psychosis, major depression or obsessional disorder are identified in such surveys.

It is possible that the failure to identify a specific relationship with depression is due to undifferentiated measurement of life event stress. Finer distinctions between different types of life stress suggest that only certain types of event characterised by loss, separation and social exits may be associated with depression (Paykel et al., 1975). Other aspects of life events may be related to other clinical conditions. For example, events characterised by threat and danger may be related to anxiety symptoms (Finlay-Jones and Brown, 1981). Miller and Ingham (1983, 1985) have developed a more sophisticated rating system for event

characteristics in terms of uncertain outcome, choice of action, hopeless situation, anti-social act and personal loss, in addition to long term threat. The total number of such characteristics present in a situation (either an event or difficulty) was found to increase its stressor potential.

What is the magnitude of the effect?

Sceptical authors (see for example Sacco, 1982) have argued that although the association between life stress and depression is well replicated, it is typically weak in magnitude. Thus, whilst in large samples typical correlations of between .17 and .37 are statistically significant, life event stress alone accounts for only 3% to 10% of variance in depression scores (Lloyd, 1980). However, it would be mistaken to dismiss this magnitude of effect as trivial. In epidemiology many effects, whilst modest in magnitude, are well replicated and clearly of scientific and clinical as well as statistical significance. Thus, the robust finding of a sex difference in depression prevalence or of the association between smoking and lung cancer are only modest in magnitude, in the sense that not much of the variance in depression is 'explained' by sex, nor the variance in cancer by smoking. Most women are not depressed and most heavy smokers do not develop lung cancer. Epidemiologists therefore typically use other parameters to examine magnitude, such as relative risk or population attributable risk. Paykel (1978) has calculated relative risk figures from previously published findings, demonstrating that the relative risk factor for any life event is about 5.4 and for an exit event about 6.5.

Transient mood disturbance or affective illness?

It is certainly possible to argue that questionnaire measures of psychological distress are sensitive to minor transient disturbances of mood which follow a stressful life event (by definition). The association between life events and raised levels of distress would then be tautological, equivalent to saying that stressful life events are stressful rather than that they trigger clinical disorder. There are a number of reasons why such a criticism seems illfounded. First, the controlled studies of depressive patients already cited were clearly beyond the realm of normal distress reaction. Second, studies using standardised psychiatric interview and a case identification procedure also find an increased risk of depression onset after a stressful event. However, it can still be argued that the threshold commonly taken in such instruments to be 'equivalent to' a psychiatric case may be picking up transient dysphoric states which are not actually equivalent in symptom pattern or duration to true affective illness (Tennant and Bebbington, 1978). Since community 'cases' are rarely suffering 'endogenous' depression (i.e. DSMIII major depressive episode), it is possible that the link with life event stress would not be found with more severely ill patients.

Bebbington, Tennant and Hurry (1981) combined patients and community 'cases' who had a CATEGO diagnosis of R and D (depressions with retardation, guilt or psychotic features) and compared them to those with neurotic depression (N) or anxiety (A). They found that when they considered 'logically independent' events and difficulties, only the neurotic and anxious groups had a higher rate. Adopting the most stringent criterion for event independence for this purpose has been

criticised (Brown and Harris, 1982), since most stressful events are, by their nature, 'possibly independent' rather than 'logically independent', so that only a small subsample of stressful life experiences is tapped. Having established the association between life events and symptoms for independent events separately, Brown and Harris argue, it is wrong to exclude possibly independent events.

Most other attempts to distinguish major from minor depression on the basis of life events have been less successful. Benjaminsen (1981), in a study of 89 successive inpatient admissions meeting Feighner criteria, distinguishes 'neurotic' from other depressions in five different ways: a) non-endogenous, b) non-psychotic, c) mild, d) secondary to other neurosis and e) self-pitying. He used Paykel's life event scale and found no differences between the groups in reporting at least one event, although 'neurotic' depressives reported more multiple and related events.

Brugha and Conroy (1985) reported a small case control study of 32 onset depression cases divided into CATEGO classes N and R, matched with GP attenders. They found no evidence that R cases had fewer threatening experiences than N, and questioned the use of 'endogenous' versus 'reactive' as a conceptual distinction between major and minor depression. Katschnig (1984) used clinician diagnosis and CATEGO classification in a Viennese sample of 176 depressed patients, but found no statistically significant difference in life events between 'situational' and 'endogenous' depression. Other studies have reported similar negative results (Leff et al., 1970; Thompson and Hendrie, 1972)

It therefore seems possible that life events have a precipitating role

in affective disorder, rather than simply sub-clinical dysphoria, and
that this applies to so called 'endogenous' as well as less severe
depressions.

Do prospective studies find that life events predict onset of disorder?

From the evidence reviewed so far the most damaging methodological
criticisms of retrospective studies seem unfounded, given the use of a
valid and reliable life event instrument. On the other hand, however
soundly designed, cross-sectional retrospective research is limited in
the degree to which causal inferences can be drawn. Prospective studies
which follow up a population so that onset (or remission) occurs after
the first measurement occasion, clearly have greater power in examining
causal questions. Tennant (1983) reviewed eight such studies, some with
a long interval between measurements and others with a brief follow up.
The results were generally disappointing, although Tennant does not
examine very closely the reasons for this, simply remarking that there
is little evidence for a substantial causal role of life events in
precipitating affective disorder. This may be an example of the common
phenomenon where one's level of methodological stringency varies
according to whether one is in or out of sympathy with the findings!

In fact, from the studies reviewed by Tennant, it could be argued that
none provides an adequate test of the hypothesis. Hornstra and Klassen
(1977), Andrews (1981) and Theorell et al. (1975) examined whether stress at
Time 1 influenced illness from eight to twelve months later. As Brown
(1981) points out, prospective studies must still examine the events
preceding onset, and this will inevitably involve retrospective
questioning. Of the studies Tennant (1983) reviews, only one (Murphy,

1983) uses the LEDS. This study examined whether life event stress at admission predicted relapse at 12 month follow up in elderly depressed people. One study (Henderson et al., 1981) did find that antecedent life events significantly predicted GHQ scores, but Tennant dismissed this result as 'trivial' on the grounds that events accounted for only 4% of the variance in GHQ scores. It should be clear from the discussion above that this is an inadequate reason to reject the finding.

There is no doubt that well-designed prospective studies, using good measures of life event stress and psychiatric disorder, will clarify the extent of the causal role of life event stress. We await results from recent surveys by research groups at Bedford College London and the MRC psychiatric epidemiology unit in Edinburgh, which will be of particular interest in this regard.

Summary

From the best available evidence, it seems likely that life event stress plays a role in precipitating psychiatric disorder, particularly non-specific psychological distress characterised by depressed mood and anxiety and unipolar affective disorder. The present study, with its cross-sectional design and retrospective event measurement, will not attempt to add anything to the debate over causes, merely examining the association of life event stress with a range of mental health indices.

Q10 Is there an association between life event stress and psychological distress in the present sample and what is the magnitude of the effect?

One issue can be examined in the present study, however, since both a standardised case identification procedure will be used together with continuously distributed measures of psychological distress. The threshold (PSE ID level 5, see 3.1) at which community respondents are identified as 'cases' can be examined in terms of other variables. This may elucidate whether such cases are demonstrating 'normal transient distress' or more severe conditions similar to definite 'cases'.

Q11 **When continuously distributed measures of depression, self esteem and cognitive style are broken down by PSE ID level, are the psychiatric cases at the threshold more similar to non-cases than definite cases?**

The extent to which the life event "merely provides the context in which depression-prone individuals become depressed" (Sacco, 1982) is not yet understood. It is certainly clear that many people exposed to severe, uncontrollable and undesirable life event stress do not become clinically depressed nor anxious. The search therefore continues for further factors which are associated with the onset of disorder. Two further classes of variable have been examined; the resources of the social network in providing social support and individual difference variables such as personality, coping ability and cognitive style.

2.2 Social support

The availability and adequacy of a socially supportive network which meets the individual's needs for attachment, assistance, information and social identity, has been posited as contributing to mental health (Leavy, 1983). Social support deficits are, by the same token, a putative risk factor for psychiatric disorder. One of the major debates

about social support is whether it has a relationship with mental health in routine circumstances, or only in the presence of life event stress. Here, social support deficit is seen as a vulnerability factor, making it more likely that an individual will become depressed following a stressful event but having no effect in the absence of an event. This is often termed the 'stress-buffering' hypothesis, since the availability of support is thought to protect the individual from the stress of the event. Some studies provide evidence of such processes. On the other hand, many studies have found an independent or main effect of social support and a number of these will be reviewed here. Section 2.3 will then examine in more detail the stress-buffering hypothesis, reviewing studies which support this model and some of the methodological and statistical issues involved in testing it. Other conceptual and methodological issues relating to measurement of social support will be considered in 3.3.

Andrews et al. (1978) studied 863 adults in a representative cross-sectional survey of Australian suburban households. Three aspects of social support were studied; crisis support (combined instrumental and expressive), neighbourhood integration and community participation. Psychological distress was assessed using the GHQ-30. A significant association between crisis support and GHQ 'caseness' was found, independent of life event stress. In the absence of recent life stress, this measure must be seen as the 'perceived availability of help in a crisis'.

Lin et al. (1979) studied 170 (121 of them male) Chinese-American heads of households using a nine item social support measure (focussing on social interaction and non-kin support) and a 24 item measure of

psychiatric symptomatology. There were independent effects of life

events and social support (beta -.36), but no strong support for the

buffering hypothesis. An obvious weakness of this study is the support

scale which had low internal consistency and neglects expressive support.

Williams, Ware and Donald (1981) examined life events and social support

in their postal survey of 2234 people in Seattle at two points one year

apart. They used a 38 item self report measure of symptomatology and a

summary nine-item checklist of social contacts and resources (i.e. a

mixture of instrumental and expressive support). The best predictor of

symptoms at Time 2 was symptoms at Time 1. Once these had been taken

into account, life events and social support independently predicted

symptoms at a statistically significant level. The authors concluded

that "there appears to be a positive value of social supports for

persons at all levels of life events".

Aneshensel and Stone (1982) used two indices of social support in their

community sample of 1000 Los Angeles residents; a count of the number

of close ties in the respondent's network and a six item Likert scaled

measure of socio-emotional support (including instrumental help). The

CES-D scale was used, but instead of analysing it as a continuously

distributed score, for reasons which are not explained and are hard to

understand, the authors dichotomised it using a cut-off of 16+ in order

to derive "a sensitive but not overly specific indicator of a clinically

defined diagnosis of depression". Both social support measures were

independently related to depression using log linear analysis, with

little evidence of a buffering effect.

Holahan and Moos (1981) report a longitudinal study (12 month lag) of

245 men and 248 women in San Francisco. Social support was assessed by a Family Relations Index, a Work Relations Index and a further support index tapping diffuse support from secondary social ties. The outcome variables were a seven item measure of depression (similar to Langner) and a psychosomatic symptoms measure (similar to an anxiety measure). Controlling for initial levels of symptoms and other variables at Time 1 they found the family support measure predicted depression scores for women but not for employed men. This study illustrates a number of methodological shortcomings, in particular the limitations of a postal survey with 40% nonresponse rate, poor measures of clinical status and social support measures which have a good deal of overlap with the clinical measure.

Solomon (1985) examined instrumental and expressive social support in 436 rural mothers, some of whom had been exposed to the life event stress of evacuation following the Three Mile Island nuclear accident. Mothers with low expressive support were more at risk of affective disorder whether or not they had been exposed to this stress. Instrumental support was not associated with disorder in this study.

In a small scale General Practice study, Davies et al. (1983) found a significant relationship between social interaction scores (measured using the Interview Schedule for Social Interaction) and GHQ, although the small sample size prevented any test of the stress buffering hypothesis. Miller and Ingham (1976) studied 172 GP consulters and a matched group of non-consulting controls. For women in particular, the lack of a confidant and for both sexes, the number of casual acquaintances, were associated with level of symptomatology.

Surtees (1984), reporting preliminary results from an Edinburgh random sample of 576 women, found that in the cross-sectional study, the presence of a confidant was associated with RDC depression, but only for working-class women. In the prospective analyses, absence of a confiding relationship, disrupted marital status and low diffuse social contact, predicted onset.

A number of studies have adopted Brown and Harris's definition of an intimate confiding relationship and used the LEDS, so can be compared. In their random community survey (q.v.), Bebbington et al. (1984) found a significant inverse relationship between intimacy and psychiatric caseness at PSE ID5+ and when all cases meeting Brown and Harris's criteria were considered. Excluding chronic cases reduced this association. Costello (1982) considered an intimate relationship with a spouse or boyfriend separately from the availability of a confidant, finding a significant overall association with depression in each case.

From these studies, it appears that in the presence or absence of life event stress, social support may have a benign relationship to mental health. This is plausibly because embeddedness in a social network and routine interaction with stable attachment figures are basic human needs which, if not met, result in a deficit state of dysphoria and raised anxiety. On the other hand, any attempt to disentangle cause and effect is likely to be even more difficult than with life event stress, not least because in Henderson's (1984) words, "social support is obtainable only through social relationships, which are themselves achieved only by

having competence in establishing and maintaining them." Indeed, a number of authors in this field have pointed out the inadequacy of aetiological models based on unidirectional causes, not least because "the ongoing interactive processes of a social network involve feedback" (Wolfe, 1981, p174). For these reasons Leavy (1983) recommends that relationships between variables be seen in terms of causal loops and circles and less as straight lines. Of course, such general points do not remove the need to improve measurement instruments which are indirectly tapping mood, since these will produce associations which are spuriously high, irrespective of the causal issues. Again, the present study makes no contribution to the causal debate, but will address the question:

Q12 Is there an association between social support and psychological distress in the present sample independent of life event stress?

2.3 Social Support as a stress-buffering factor

The possibility that the primary importance of social support is in stressful rather than routine circumstances has obvious intuitive appeal. The model was put forward by Cassel (1974) in these terms:

"(social support processes)...might be envisioned as the protective factors buffering or cushioning the individual from the physiologic or psychologic consequences of exposure to the stressor situation. ...(there is a) lack of recognition in many investigations that social supports are only likely to be protective in the presence of

stressful situations." (p478, emphasis in the original).

and by Cobb (1976) as follows:

"...it is my current opinion that social support facilitates coping with crisis and adaptation to change. Therefore one should not expect dramatic main effects from social support. There are of course some main effects because life is full of changes and crises. The theory says that it is in moderating the effects of the major transitions in life and of the unexpected crises that the effects should be found." (p302).

Results already reviewed make it hard to accept the stress-buffering or vulnerability model in its strongest form - that there is no association between social support and disorder in the absence of life event stress, although some studies have found this. For example, Henderson and his colleagues (1981), in their prospective study of social support in 230 Canberra residents interviewed four times at four monthly intervals, found, quite contrary to their expectations and hypotheses, that none of the social support indices had any significant predictive effect for the subsequent onset of symptoms in people exposed to low levels of adversity. In high stress situations a predictive effect of perceived but not available social support was found. Miller & Ingham (1979) report no effect of diffuse social support in the low stress group of their large community sample on anxiety and depression symptoms. The significant main effect overall was due to the association in the high stress group.

It is possible that an interaction does exist between social support

deficits and life event stress such that more cases of psychiatric disorder are found when they act jointly than would be predicted from knowledge of their independent effects. This phenomenon, known as 'synergy' in epidemiology and medicine, is not incompatible with an independent effect of social support.

The problem with reviewing evidence for synergy is that there are differing criteria for inferring an interaction (Everitt & Smith, 1979). More accurately, we are concerned with the definition of no interaction; the extent to which one would expect the two factors to increase the risk of disorder if they were acting jointly but independently. A common epidemiological approach is to assume that risks are additive, so that any excess of cases over those attributable to the summed effect of the two variables is considered due to 'interaction'. An alternative approach is to assume that risks multiply, and unless the effect of the two factors acting jointly exceeds the product of their independent effects, no interaction can be inferred. Both approaches have been used within mainstream epidemiology, where they have been the subject of debate.

For example, Koopman (1981) urges great caution in interpreting no interaction in a multiplicative model, as this may be just a failure of the data to discriminate between an additive or multiplicative model, since "it takes a great deal of data to do this." (p723). Rothman (1976, 1978) has reasoned in favour of the additive model as the appropriate one in epidemiology, since for public health purposes, any exacerbation of the risk due to joint action is of clear significance. On the other hand, Walter and Holford (1978) argued that the choice is arbitrary, and that the multiplicative model has statistical advantages.

Kupper and Hogan (1978) point out that if the two factors have
equivalent modes of action so that either factor can be regarded as a
different concentration of the other, it may be more appropriate to
express interaction in terms of non-additivity in <u>dose</u> rather than
response. They demonstrate that if such equivalency exists and one
adopts an additive model in terms of the response variable, one would
undoubtedly be led to the erroneous conclusion that the two factors are
synergistic. They conclude that in the absence of specific knowledge of
the processes underlying the onset of disease, a great deal of caution
needs to be exercised in reaching any definite conclusions.

There are no empirical grounds on which to make a choice between the
two definitions of 'no interaction', although, of course, this does not
prevent authors championing one approach or the other. Cleary and
Kessler (1982) express the issue thus:

"There is no way to determine empirically which of the two
formulations - difference or ratio - more accurately describes the
causal processes at work in observed data. Arguments independent of
the data must be marshalled in defense of one formulation over the
other. Unfortunately there is no unanimity about the considerations
that are important in making this decision." (p165)

They go on to say that whilst they favour the multiplicative definition,
when the additive one gives discrepant results they would be unwilling
to accept the 'multiplicative' result unconditionally. The matter is
fundamentally one of theory, since:

"The only truly adequate way to determine the correct model when the
two formulations yield discrepant results is to appeal to the study
hypothesis about the processes that generate the causal link between
the risk factor under investigation and the outcome. If there is no
basis in theory to assert what the appropriate formulation of this
causal link is, then uncertainty about the existence of a modifier
effect, and indeed about what is meant by a modifier effect, is a
necessary result". (p166)

There is as yet no such theoretical basis for making a choice in the
field of psychosocial risks and psychiatric disorders, so we must live
with the uncertainty and inconvenience of a double criterion. Clearly,
the multiplicative definition of no interaction leads to a much more
conservative test of the stress-buffering hypothesis, with the danger of
accepting the null hypothesis inappropriately. Most familiar
statistical procedures for estimating interaction effects, such as
multiple regression and log linear analysis, adopt the multiplicative
definition, and part of the difficulty has been the lack of a test of
significance for the additive interaction term. In this respect it is
worth noting that Gokhale and Kullback (1978) give an algorithm for
estimating the significance of 'additive' interactions in contingency
tables, and this was used in the present research. Some of the studies
mentioned in this section find an interaction only on the 'additive'
definition, others with either definition. Yet others report a mixed
picture, with only some of a number of findings consistent with
stress-buffering.

Brown and Harris (1978) report that among women who had not experienced
a severely threatening life event or major difficulty, there was no

relationship between the lack of an intimate relationship (expressive social support) and depression onset (3% of unsupported vs 1% of supported women). The equivalent figures in the presence of a severe stress were 32% and 10%, a significant effect. This does represent an interaction on the additive but not the multiplicative definition. Similar results are reported by other researchers using Brown's measures. Campbell, Cope and Teasdale (1983) report 12% vs 2% and 46% vs 13%, Brown and Prudo (1981) report 5% vs 1% and 36% vs 15%, Costello (1982) reports 7% vs 5% and 36% vs 15%. These pleasingly consistent results are all evidence of stress buffering if one takes an additive approach to inferring interaction.

Turning to other studies, Gore (1978) is often quoted in support of the stress-buffering model. She followed up 100 married blue collar men from stable employment following involuntary job loss after plant closure. A control group of 74 employees was also interviewed, but results from these are hardly reported, because they had more health problems at initial interview than the job loss group! This was attributed by the author to their self selection in wanting a public health nurse to visit them, but no details are given about sampling procedures or refusal rates. The job loss group were interviewed on five occasions; six weeks before plant closure (although after news of impending redundancy had been given), then one month, six months, one year and two years after closure. The only measure of stress was the men's stage in this process, so that interviews over time were assumed to represent differing degrees of stress. The social support measure was a 13 item index of perceived support and there were checklist measures of depression/self blame and illness symptoms. The evidence for a statistically significant interaction is hard to find, given no

proper measure of life event stress. There was a more significant drop from first to final visit for all supported men than the two unsupported groups, whether promptly re-employed or unemployed at Time 2. The author interprets the findings as showing an exacerbation effect of low support rather than a buffering effect of high support, although this distinction is not made, indeed cannot easily be made, on empirical grounds.

Another study of men facing unemployment is that of Bolton and Oatley (1983), who compared 49 men who had become unemployed approximately 10 days before interview with matched employed controls and re-interviewed them six months later. They found that long term unemployment resulted in increased depression scores on the Beck Depression Inventory. In the unemployed group only, lack of social interaction outside working hours predicted increased depression, but there was no association in the employed group.

Paykel et al. (1980) interviewed 120 mothers from five to eight weeks after giving birth. They found that three variables reflecting the quality of the marital relationship were associated with depression only amongst women who had experienced an 'undesirable' life event. For example, a poor overall marital relationship was rated in 76% of depressed but only 21% of non-depressed women who had experienced such an event, as against 29% of depressed and 19% of non-depressed women who had not.

Turner and Noh (1983) also studied post partum women. They used a 22 item weighted life event scale and Hollingshead's index of social class based on occupational categories. The social support measure used was

highly perceptual (Kaplan-Cobb story identification). The distress
measure was a 19-item index of anxiety, depression and anger-aggression.
As expected, the life event stress measure was found to be more highly
related to distress in the working-class group than the middle or upper
classes. For the working-class women a relationship between social
support deficits and distress was found only in the high life event
group, whilst for the middle and upper-class women there was more
consistent evidence of an independent effect of support.

Warheit (1979) interviewed a community sample (n=517) twice, three years
apart. Life events were estimated by 23 items from Paykel's inventory (all
loss events) and social support by a number of questions about availability of
spouse, close relatives and close friends. An 18-item factor analytic scale
of depression was used as the outcome variable. The independent effect of
social support was modest but clear, after the effect of depression at Time 1
was removed. The author claims that social support significantly lessened the
impact of loss except when the resource was close relatives nearby, but no
interaction F ratios are reported. However, from the breakdown tables, there
is some evidence of buffering, since the difference between depression means in
the high loss and low loss groups were doubled for the non-buffered groups.

Frydman (1981) interviewed 220 parents of children with cystic fibrosis
or leukaemia. He used a 66 item life events inventory for 3 months
prior to interview and the same social support measures as Andrews et
al. (1978). Direct effects of life event stress and all three social
support measures on psychiatric symptoms were found using the GHQ-30 and
measures of general well-being and anxiety. There was also a
significant interaction between life events and the neighbourhood
support measure for the cystic fibrosis group only. Although the author

interprets these results in favour of the stress-buffering model, they seem to me to be equivocal.

Pearlin et al. (1981) interviewed more than 600 subjects in a community study on two occasions four years apart. The social support measure consisted of the perceived availability of someone other than the spouse to confide in, plus a score if the spouse was a confidant. This is therefore an expressive support measure. The stressor examined was job disruption, taken as illustrative in their development of a model of the stress process. The depression measure was the frequency with which each of ten symptoms were experienced in the week before interview, used as a change measure (Time 2 symptoms were regressed on those at Time 1). Measures of self-esteem and mastery were also included. Social support was found to be unrelated to depression change, although it did relate to changes in mastery and felt economic strain. Product terms were created in the multiple regression, but the interaction was not significant in predicting depression change. However, social support did interact with job disruption in predicting change in self-esteem and mastery scores.

Turner (1981) reports data from four samples. The first (n=293) is from a family volunteer longitudinal study of new mothers, where data were obtained post partum and six months after birth. The second (n=65) is a study of maladaptive parenting in mothers with childcare problems. The third (n=420) is a sample of adults suffering the onset of hearing loss. The fourth (n=100) consists of individuals suffering functional psychosis, maintained in the community. The social support measure in each case was the highly perceptual Kaplan story identification technique. In studies 1 to 3 the outcome measures were Kellam's scales

of anxiety, anger and depression (19 items in all) and in study 4 a brief symptom inventory (short form of SCL-90). To test the buffering model, stepwise multiple regression of well-being on support was used, including a life events term and the interaction. In addition, the correlations between social support and well-being were examined in high, medium and low life event groups, and the partial correlation of the interaction term with well-being was reported, controlling for life events and social class. Social support was found to be significantly correlated with well-being in all four samples. In the family volunteer study (1), life events and social support showed main effects, but introduction of the interaction term abolished the life event effect due to multicollinearity. This problem prevents us from seeing whether the life event effect is buffered by social support, and underlines the importance of reducing collinearity by 'centering' both variables (standardising to a mean of 0 and standard deviation of 1) before creating the product term. The correlation of social support with well-being was stronger in the high life event stress group (.47 vs .34 and .32 in the medium and low stress groups respectively). These results support the interpretation that there is modest but reliable association between support and well-being at all levels of life event stress but that it is most important in stressful circumstances.

Solomon and Bromet (1982) report on 311 mothers with at least one child under two years who were living within ten miles of Three Mile Island at the time of the nuclear accident. This accident and the evacuation were the stressful event under study, and a brief life event scale was also administered. Brown's approach to expressive social support was used,

examining the presence or absence of a confiding relationship with husband in relation to an RDC episode of anxiety or depression during the year prior to interview. In the Three Mile Island sample, marital intimacy was related to disorder in high life event group only (but note that Solomon, 1985, in the paper already mentioned found independent effects using a different support measure in the same sample).

Evidence for a vulnerability, stress-buffering or synergistic process can therefore be found from a number of studies. Thoits (1982) points out a methodological difficulty here. She argues that life events and social support are not two independent discrete causes, since in the lives of respondents they overlap. Support may be a product of the occurrence of life events, and some loss/exit events reduce available support; for example, loss of a confidant or a marital separation. She points out how this may bias studies in favour of the stress buffering hypothesis, since those classified as unsupported are likely to have experienced undesirable events in the previous year. Thus the high number of cases in the most vulnerable cell will not necessarily be due to synergy. She goes on to argue that a valid test of the stress buffering hypothesis requires one to establish that support offers protection when stress is present over and above the protection it offers when stress is absent. In multiple regression formats, she recommends hierarchical entry of the interaction term after the two independent variables.

The other difficulty concerns the form of the outcome measure: psychological distress or psychiatric disorder. It is usual for studies either to adopt a case identification approach or to use dimensional

measures. The forms of statistical analysis which have been used for each of these are typically significance tests in partitioned 2x2x2 contingency tables (not a valid test of interaction), log linear analysis or logistic regression of contingency tables, or multiple regression for continuously distributed measures. This leaves the possibility that different estimates of the interaction effect are produced because of different statistical procedures.

It appeared that the present study offered an opportunity to examine the stress buffering hypothesis because the sampling procedure would ensure that life event stress would be uncorrelated with social support in the sample as a whole. This relates to Thoits' (1982) concerns over confounding between the two favouring the buffering model. Furthermore, the present study would include both a case identification procedure and continuously distributed measures of psychological distress (see section 3.1). It would therefore be possible to examine whether using different measures and data analytic procedures with the same database would yield differing results.

The following research questions relating to this issue can be formulated:

Q13 Is there evidence of an interaction between life event stress and social support beyond that expected from the additive model of their joint effect?

Q14 Is there evidence of an interaction between life event stress and social support beyond that expected from the multiplicative model of their joint effect?

2.4 Individual differences in the stress response

In examining further what factors might influence whether or not a clinical disorder develops in the presence of social adversity, a number of authors have emphasised individual differences. By introducing this class of variables, one is moving away from epidemiology towards individual psychology which necessarily introduces the problem of bridging two separate intellectual disciplines. For example, where the epidemiological approach is to develop measures of life event stress and social support which are 'unconfounded' with clinical measures and 'uncontaminated' with mood or negative response set (Dohrenwend et al., 1984; Henderson, 1984), psychologists have argued that such an approach is fundamentally misguided, since the individual is not a passive organism on which stressors act to produce disorder (Lazarus et al., 1984). This is a reification of 'stress' and 'disorder' as if they were independent entities with their own ontological status. Rather, the individual is actively interacting with the environment so that stress and disorder can only exist in terms of the individual's system of self-environment organisation.

Despite this conceptual tension, many studies have been concerned to specify the role of the individual within a stress paradigm. These have been based on diverse concepts such as personality factors (e.g. extraversion, the 'hardy' personality), social interest, coping, self-esteem and cognitive or attributional style. A few examples will illustrate the range of possible approaches to this aspect of the stress process.

Hobfoll and Walfisch (1984) studied self concept and social support in a
group of 68 Israeli women immediately before undergoing biopsy for
suspected cancer. This acute stress group was compared with the
non-cancer group three months later (called the everyday stress group).
Pearlin and Schooler's (1978) self-esteem and mastery scales and
measures of anxiety (Spielberger) and depression (CES-D) were used.
Self concept measures were significantly related to anxiety and
depression for both groups, a result the authors take in support of
their hypothesis that self concept has a direct effect on depression and
anxiety. In fact the results could equally suggest that the
self-concept measures were merely tapping another aspect of depression
and anxiety and would co-vary with these over time.

A more confident interpretation of a role of self concept independent
from that of depression can be made if it is measured before the
subsequent life event and depression onset. Brown et al.(1986)
report data from a prospective study of 400 largely working-class women
with children at home. Social support and self-esteem at the first
interview were used to predict risk of depression onset in the following
year once a stressor had occurred. The Bedford College criterion of
depression was used, which is based on the short PSE, but takes a higher
threshold (in practice mid-way between ID5 and ID6). Using this
threshold, they found that among those who experienced a provoking
agent, 33% with negative evaluation of self 13% without, developed
depression. There were no significant differences in depression onset
for the high and low self-esteem women without a stressor (4% vs 1%).

'Coping' is a term used to describe the adaptive response made to

alleviate the effects of stress by the individual and this has been
examined by a large body of studies (Pearlin and Schooler, 1978; Lazarus
and Launier, 1978; Silver and Wortman, 198 ; Folkman, Schaefer and
Lazarus, 1979; Lazarus, 1981). Lazarus and his group have seen appraisal
and coping as two mediating processes between the life event and the
clinical outcome. Coping here refers to cognitive and behavioural
efforts to manage both environmental and internal demands that tax or
exceed the individual's resources. Coping is seen as either
problem-focussed or emotion-focussed.

An illustration of this approach is provided by a study reported by
Coyne,Aldwin and Lazarus (1981), where 15 depressed and 72 non-depressed
San Franciscan residents were identified on the basis of Hopkins symptom
checklist scores at two measurement occasions eight months apart.
Subjects who had changed their clinical status over this time were
excluded. A report of stressful episodes was elicited and the Ways of
Coping checklist was used to assess responses to them. Seven subscales
were examined: problem focussed coping, wishful thinking, help-seeking,
growth (e.g. found new faith in life), denial, emotional support and
self blame. The depressed people scored more highly on wishful
thinking and seeking emotional support, but the difference in self blame
was not significant.

Whilst it is clearly of great clinical appeal, there are a number of
difficulties with this approach, not least, of course, separating either
conceptually or empirically some of the 'coping' scales from social
support or clinical outcome. Other authors have taken the stress and
coping paradigm into prospective studies of life events and depression
(Wheaton, 1983; Edwards & Kelly, 1980; Billings and Moos, 1984; Husaini

and Frank, 1985; Miller et al., 1985).

It was certainly not the primary purpose of the present study to make a contribution to this complex field. Any worthwhile investigation into the range of coping processes following life stress was thought to be entirely beyond the resources of the present study. However, it seemed possible, given the measures of social adversity and mental health already included in the study, to examine the extent to which individual differences moderated stress/ disorder relationships. For this reason, measures of self-esteem and cognitive style were included. Self-esteem is, for the purposes of the research questions in Chapter 1, conceived as a mental health measure, not least because of its close relationship to depression. However, it is also possible to use self-esteem as an individual difference measure in analysis of variance or multiple regression. Here a linear model of social adversity and self-esteem is derived to predict psychiatric case status, and the depression variable should be entered first as a co-variate.

Cognitive style has been conceptualised as an enduring personality characteristic which will predict how vulnerable an individual is to developing clinical disorder after exposure to life event stress. The attributional reformulation of Seligman's learned helplessness theory emphasises that the individual's perception of lack of control over outcomes will relate to depression. Specifically, three attributional dimensions are described. Internal vs external attributions, stable vs unstable, and global vs specific. A tendency to make internal, stable and global attributions for failure is said to predispose individuals to becoming depressed after they have experienced a stressful life event (Abramson, Seligman and Teasdale, 1978; Petersen and Seligman, 1984).

There is not much evidence that negative cognitive style does act in the
way outlined in the theory (Brewin, 1985). In particular, it has not
yet been demonstrated that both a stressful event and a negative
cognitive style are necessary for a disorder to develop. Two
alternatives are equally possible. The first is that negative cognitive
style is not an enduring personality characteristic but part of the
depressive syndrome itself. This 'symptom' model would predict that
negative cognitive style accompanies depression and alters when the
depression remits. A further possibility is that social adversity, if
severe enough, can trigger depression even in people who do not have a
'depression-prone' cognitive style. Those who are depression-prone may
not require severe social stress to become depressed. The 'events'
which trigger depression in these people may have purely personal,
idiosyncratic significance rather than be generally stressful. This
model is conceptually separate from the idea that cognitive style
renders individuals more vulnerable to life event stress, as it proposes
that the two processes act independently. Depression therefore has a
mixed aetiology. McKinney (1982) refers to this possibility when he
writes that behavioural coping mechanisms in humans can fail if the
stress is severe enough, but they fail more frequently for personality
or developmental reasons at stress levels which do not affect others.

Because the present study is cross-sectional, it is clearly unable to
resolve causal questions. However, it is possible to examine these
three competing hypotheses in the present study, because one can infer
that three different patterns should occur in the present data for each.

First consider four subgroups within the sample;

    a) depressed mothers at high psychosocial risk

    b) depressed mothers at low risk

    c) non-depressed mothers at high risk

    d) non-depressed mothers at low risk

If one examined indices of negative cognitive style in each group, the 'symptom' model would predict similar and high scores in groups a) and b) compared to groups c) and d). The 'vulnerability' model does not predict scores in group b), but one would certainly expect group a) to be particularly characterised by negative cognitive style, since both stress and negative cognitive style act to produce depression. In contrast, the 'mixed aetiology' model would predict low scores in group a) and high scores in group b), since it states that group a) are depressed by virtue of their social risk, not their cognitive style, and group b) are depressed because of their cognitive style in the absence of severe stress. Of course, such a result would only be suggestive, but the study was felt to be worth doing since so few others have so far combined cognitive style measures with real (not hypothetical) life events in general populations using case identification procedures.

Two final research questions can be addressed:

Q15 Are the data obtained in the present study consistent with the 'vulnerablity' (diathesis-stress) or the 'mixed aetiology' model of the role of negative cognitive style in relation to social stress?

Q16 Do individual differences in cognitive style correlate with psychiatric case status irrespective of social stress category?

2.5 Summary and research questions

Social stress, consisting of stressful life events, chronic social diffi-
culties and deficits in social support, is commonly found to be
associated with psychological distress and affective disorder in
retrospective surveys of general population samples. There is evidence
that levels of social stress are higher in working-class samples and
that the association between social stress and depression will be
relatively strong in the present sample of working-class mothers of
young children. Social support may have an independent relationship
with depression at all levels of life event stress. It may also act to
protect mothers who have experienced high levels of life event stress
from developing depression and its absence may act to exacerbate the
effects of life event stress. When testing for the stress buffering
effect, confounding between events and support must be reduced to a
minimum, the contribution of the interaction must be estimated after
life events and supports separately have been taken into account, and
separate analyses should adopt an additive criterion of no interaction
as well as a multiplicative one. Negative cognitive style may also act
to exacerbate the effect of social stress, or it may be making an
independent contribution.

It is now possible to draw together the research questions concerning
social stress and mental health arising from the studies reviewed in
this chapter.

Q10. Is there an association between life events and distress in the
present sample and what is the magnitude of the effect?

Q11. Are the psychiatric cases at the threshold (ID=5) more similar to non-cases than definite cases in terms of the continuously distributed measures of depression, self-esteem and cognitive style?

Q12. Is there an association between social support and psychological distress independent of life event stress?

Q13. Is there evidence of an interaction between life event stress and social support beyond that expected from the additive model of their joint effect?

Q14. Is there evidence of an interaction between life event stress and social support beyond that expected from the multiplicative model of their joint effect?

Q15. Are the data in the present study consistent with the 'vulnerability' (diathesis-stress) or the 'mixed aetiology' model of the role of negative cognitive style in relation to social stress?

Q16. Do individual differences in cognitive style correlate with psychiatric case status irrespective of social stress category?

Questions 10, 12, 13 and 14 are addressed in Chapter 8, Questions 15 and 16 in Chapter 9 and Question 11 in Chapter 10.

CHAPTER THREE: MEASURES

3.1 Measurement of mental health

Mental health is a general term used to subsume a wide variety of

constructs, both negative and positive. Depression and anxiety have

been conceptualised as psychiatric disorders but also as state variables

which are continuously distributed in the population. Non-psychiatric

concepts include such terms as non-specific psychological distress,

unhappiness and negative affect. Low self-esteem (self-depreciation) is

a further aspect of poor mental health, related to depression but

conceptually independent of it. (Although the degree to which it can be

empirically distinguished from depression is a separate question which

has already been discussed on p66.) In contrast to the plethora of

instruments focussing on mental health problems, psychiatric research

has been less concerned with indices of positive mental health. Such

concepts as positive affect, psychological well-being, happiness and

self-esteem can be included here.

In selecting suitable measures for survey use, I was influenced by the

need to tap a number of aspects of mental health rather than depend on

one measure or one method. In a general population sample, it was

thought particularly important to include measures of non-clinical

aspects of mental health as well as those sensitive to high levels of

symptomatology. Given the possibility that some differences between

studies in detecting the effects of paid employment may be due to method

variance, it was also thought important to use both interviewer-rating

and self-rated measures of mental health, particularly for the core variables, anxiety and depression.

Clinical diagnosis of affective syndromes such as depression and anxiety is unreliable, in that the percentage agreement between psychiatrists ranges from 35% to 65%. The ordinary methods of clinical diagnosis result in disagreement between observers, and to some extent within observers (Pasamanick et al., 1959; Zubin, 1967; Helzer, Clayton, Pambakian et al., 1977; Jenkins et al., 1985), although it can also be noted that wholesale condemnation of diagnostic categories in research was not justified by the evidence (Kreitman, 1961; Foulds, 1965; Wing, 1980b). The difficulty in setting up replicable and reliable criteria for case identification resulted in widely varying estimates of prevalence in surveys until quite recently (Dohrenwend and Dohrenwend, 1969).

Over the past 25 years, the search for reliable ways to assess affective disorders for research purposes has taken two divergent routes depending on the underlying conceptualisation. The first aimed to quantify depression (or anxiety) using rating scales, either self or interviewer rated, with summed items which yield continuously distributed scores on a putative underlying dimension of severity. The second method standardised the psychiatric interview, provided decision rules for judging a particular symptom present or absent, and devised algorithms for replicating the diagnosis of a 'case' of psychiatric disorder in accordance with a standard classification. Particular constellations of symptoms lead to respondents being assigned to different diagnostic categories. Examples of these two methods will be discussed further below. The differences between them are apparent, but it is worth noting

here that both strategies were developed in response to problems of reliability in the assessment of psychiatric disorder.

Dimensional measures of anxiety and depression

Of the many self-report measures of depression for research purposes, one of the most widely used is the Beck Depression Inventory (Beck et al, 1961). This consists of 21 items, each having four or five response alternatives rated on a four point scale. The Inventory was designed to cover the behavioural manifestations of depression regardless of diagnosis and includes cognitive, affective and somatic aspects. In its original form, designed for patient samples, the interviewer and patient each had a copy of the items. The items were read out by the interviewer, who also recorded the patient's self-assessment. Since then, the BDI has also been widely used as a paper and pencil checklist (see, for example, Hammen and Padesky, 1977). The authors made it clear that the inventory involved a "change from the usual diagnostic procedure (in treating) depression as a ... dimension and not simply as a discrete nosological entity" (Beck et al., 1961, p568).

In the validation studies of two samples of 226 and 183 patients, the scale distinguished between criterion groups of increasing severity of depression rated independently by clinicians. The difference in BDI scores between the 'mild' and 'moderate' groups was most marked, that between the none/mild and moderate/severe groups less so. Kearns et al. (1982) also found the BDI to be a relatively poor discriminator between moderate and severe depression in a British sample of depressed inpatients and recommended that it be no longer used as a clinical research tool. However, these authors acknowledged that their study

holds no implications for the use of the BDI in community samples where levels of depression corresponding to both their 'moderate' and 'severe' groups are extremely unusual.

The use of the BDI as a survey instrument has been criticised by Hunt, Singer and Cobb (1967) on the grounds that it is insensitive to small deviations from the normal and it is unsuitable for working class populations. However, both these observations seem to have been made a priori rather than on empirical grounds. In an early study of 40 working class mothers, I found the BDI to be easily administered and understood, using the original method where the interviewer records the self-ratings and answers any queries (Parry, 1977). Its sensitivity to relatively mild depressions in general populations has been established by Oliver and Simmons (1984) in a comparative study of the BDI and the Diagnostic Interview Schedule (Robins et al., 1981) in 198 volunteers recruited through random digit dialling. The BDI has also been shown to correlate significantly with depressed mood as assessed by adjective checklists, in both women patients and women from a general population sample (Lubin, 1965).

Although it is a continuously distributed measure, many studies attempt to replicate a case identification procedure by using cut-off points, most commonly 10-15 for mild depression, 16-23 moderate, and 24+ for severe depression. Oliver and Simmons (1984) note that for epidemio-logical purposes an unbiased estimate of the population prevalence could be obtained using a cut-off between 18 and 19. However, they point out that although the prevalence of depression using this cut-off closely approximates that obtained by DSMIII criteria, the correspondence of actual 'cases' is poor. For the purposes of the present study, it was

not thought necessary to use the BDI as a method of case identification,
since one was already available through a standardised psychiatric
interview (see below). Furthermore, transformation of continuously
distributed variables to dichotomous ones results in an unnecessary loss
of information. For these reasons, the BDI was used only as a
continuously distributed variable.

In addition to the BDI and the psychiatric interview, it was decided to
include two brief paper and pencil measures of depression and anxiety in
order to make a direct comparison between correlations of social stress
variables with depression and anxiety separately. The aim was, in as
few items as possible, to make as clear a distinction as possible
between the two. This was done by developing a short form of the Zung
Self-rated Depression Scale (Zung, 1965) and the somatic anxiety
subscale of the Multi-component Anxiety Scale (Schalling, 1975).

The Zung SRDS (Zung, 1965) is a 20 item self-report measure designed to
measure the subjective intensity of depression regardless of whether it
is part of depressive syndrome, a physical illness or varying in the
general population. It was not intended to form a diagnosis of
depression. In order to reduce biases, items are rated on a four point
scale and half the items are worded positively. The scale has been
widely used.

Initially the scale discriminated between two groups of outpatients,
both admitted with depressive disorder, but a subgroup who were
discharged with a different diagnosis had significantly lower scores
(Zung, 1965). A further study found that the scale discriminated
between patients diagnosed as having 'psychoneurotic depressive

disorder' and those in other neurotic diagnostic categories (Zung,
Richards and Short, 1965). There is also evidence that the scores of
in-patients treated with antidepressant medication are responsive (Burke
and Templar, 1968; Wilson, Prange, McClane et al., 1970; but see also
McLaughlin, Rickels, Manzoor et al., 1969). Cross-cultural data have
also been reported (Zung, 1969), demonstrating adequate comparability in
different settings. The scale, therefore, has demonstrated the
discriminant validity, reliability and replicability needed for
epidemiological research. It is a multidimensional scale and its factor
structure has been examined in different settings, although with
different results (Blumenthal, 1975; Cooke, 1980). For the purposes of
the present study, used in addition to the BDI, the full scale was too
long for inclusion in the paper-and-pencil questionnaire. In addition,
a number of items, in pilot work, were found to have very low item-whole
correlations. For these reasons, a six-item version was developed in a
pilot study. Full details are given in 5.1.

A state measure of anxiety was chosen to be as distinct from the Zung
Depression items as possible. For this reason, a measure which focussed
on somatic and autonomic aspects of anxiety rather than cognitive
aspects was needed. The Schalling (1975) Multi-component Anxiety Scale
was developed to measure somatic anxiety independently from 'psychic
anxiety' (e.g. worrying) and 'muscular tension'. The somatic anxiety
subscale has the advantage of being worded in clear idiomatic English
(e.g. I sometimes have a feeling that I don't get enough air to
breathe). Of the ten items, four were discarded in pilot work because
of low item-whole correlations. The remaining six were mixed at random
with the Zung items and presented together using the same four-category
response scale.

Interview measures of psychiatric disorder

The dimensional approach to measurement has not been adopted in practice by psychiatrists, many of whom find the concept of diagnosis a central one and hence the use of continuously distributed measures unsatisfactory. Wing (1970) expresses this view eloquently:

"The diagnosis of disease is the basis of modern medicine. Without it, the scientific progress which has occurred within the past hundred years, and particularly during this century, could not have occurred. Medicine would still be in the dark ages. It is not surprising that psychiatrists have endeavoured to recognise and classify illnesses and that this attempt should still be regarded as one of their most important scientific activities." (p.95).

The implication of this view is that diagnostic procedures should not be abandoned as research tools, but should be standardised and made reliable, "and thus prepare the way for tests of the validity of the diagnostic system" (Wing, 1970, p.97). There have been several parallel developments in the U.S. and U.K. over the last two decades.

Work by Feighner and his colleagues in St. Louis and Spitzer's group in New York, showed how psychiatric nosology can be made more rigorous for research purposes by laying down precise criteria for assigning a particular diagnosis (Feighner, Robins, Guze, et al., 1972; Spitzer, Endicott and Robins, 1978). Arising from this, a standardised psych-iatric nomenclature was an important step, as in the International Class-ification of Diseases (ICD) and the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM-III).

In addition to standard rubrics for classifying disorders, the diagnostic interview itself has been standardised so that the judgment about the presence or absence of a particular symptom is made reliable. A common form of standardised psychiatric interview in the United States is the Schedule for Affective Disorders and Schizophrenia (SADS, Endicott and Spitzer, 1978), which is often used with Spitzer's Research Diagnostic Criteria. In Britain, John Wing and his colleagues developed the Present State Examination (PSE), a 140 item interview derived from the clinical practice of a particular school of British psychiatry (Wing, Birley, Cooper et al., 1967). Later, an edition of the PSE suitable for community survey use was developed, omitting sections detailing varieties of psychotic symptomatology (Wing, Cooper and Sartorius, 1974). Because of the availability of training and supervision, this standardised interview measure of psychiatric disorder was chosen. The standardised interview corresponding to DSM-III was not available at that time, or would have been considered as a possible alternative.

The PSE interviewer asks standard questions followed by probes in order to elicit symptoms, then uses a glossary which provides guidance on the criteria for judging a particular symptom present or absent, and, if present, to which degree of severity. This symptom profile can then be used to assign the respondent to one of eight Index of Definition (ID) levels. These represent levels of increasing certainty that a psychiatric disorder is present. Level 1 represents an absence of PSE symptoms, level 2 corresponds to a score of one to four nonspecific neurotic symptoms, level 3 to between five and nine nonspecific symptoms. Respondents can be assigned to level 4 either because they have a nonspecific symptom score of ten or more, or have a key symptom

such as depressed mood or autonomic anxiety without the total score
reaching ten. At level 5 it is considered that there is a minimum basis
for classifying the respondent as suffering from a psychiatric disorder,
since key affective symptoms are present with each other or with certain
other symptoms, to a moderate degree of severity. Levels 6, 7 and 8
represent definite 'cases', with increasing certainty that a diagnosis
can be made (but not certain that it will be correct, since all
diagnoses are provisional using this system until corroborated). The
CATEGO computer programme assigns an ID level to individuals, and for
those at ID5 and above, a provisional ICD code for the diagnosis.

It has been demonstrated from other work that the rating of subjectively
described symptoms can be carried out reliably (Kendell et al., 1968,
report a mean Kappa of .76 for simultaneous ratings of one interview),
although rating symptoms based on observation of behaviour, affect and
appearance during the interview is much less reliable (Luria and McHugh,
1974; Carpenter et al., 1976). However, such observations are almost
never necessary in community surveys, having been incorporated into the
PSE schedule to allow ratings of psychotic or confused patients unable
to give a subjective account of their symptoms.

The PSE is of known reliability in general population surveys. Wing,
Nixon, Mann and Leff (1977) investigated the reliability of the short
form in a general population survey of 123 women in South London. They
found test-retest reliability was satisfactory over a one week period
and inter-rater reliability adequate, although not as high as that
obtained in patient samples. The validity of case identification using
the short form was reported by Wing, Mann, Leff and Nixon (1978), who
found 90% agreement between the ID-CATEGO 'caseness' ratings and the

consensus of three psychiatrists. However, others have suggested that only half of ID5 respondents would be considered 'cases' in clinical practice (Brown and Harris, 1978, p.580; Urwin and Gibbons, 1979).

The use of psychiatric ratings by non-psychiatrists has been examined, both for the PSE and other scales. Copeland, Kelleher, Gourlay and Smith (1975) compared psychiatrists, third year psychology students, trainee sister tutors, GPs and new registrars using the In-patient Multidimensional Psychiatric Scale (IMPS) with videotaped presentations of an inpatient. There were non-significant differences between the groups on overall level of symptomatology, although the psychiatrists consistently tended to rate symptoms more conservatively. Cooper and his colleagues (1977) did not find this tendency in trained nonmedical interviewers rating outpatient samples, recommending that exposure to severely depressed or anxious inpatients should be a routine part of the training of community interviewers. Coryell, Cloniger and Reich (1978) also found that non-physicians could be trained to make assessments of individual symptoms and syndromes which were of comparable reliability to those obtained between psychiatrists. Wing, Nixon, Mann and Leff (1977) concluded that non-medical interviewers can obtain as high inter-rater agreement as psychiatrists using the short PSE, at the level of symptoms, total scores and ID.

The interviews in the present study were undertaken by myself and two social science graduates. During training we all undertook to interview psychiatric inpatients with severe symptoms as recommended above.

Interviews were tape-recorded, allowing checks on ambiguous symptom ratings. When consensus could not be reached, Dr. Bebbington of the MRC Social Psychiatry Unit kindly gave advice on the correct rating. The characteristics of the PSE in the present study are examined in Chapter 10.

Psychological well-being and self-esteem

The purpose of including measures of positive mental health in the study was primarily to extend the range of measures to include those which would be more sensitive to variance in a normal population. Measures of symptoms have a reverse J distribution, where the majority of the population have very low scores. Psychological well being and self-esteem, on the other hand, vary between normal individuals without implying high levels of symptomatology or psychiatric disorder. Furthermore, as we shall see, positive and negative aspects of mental health have been shown in some studies to be relatively independent, and the relationship between them is complex. It was thought possible that the social factors under study may have differential relationships with positive indices of mental health, and it would be important to examine this.

Beiser (1971) suggested that certain aspects of positive functioning are recurrently discussed in papers on positive mental health. These include freedom from psychiatric symptoms, a sense of contentment, and effective social role performance. The first of these is included in the present study by default, through the measures of symptomatology. The third aspect was not included, since hypotheses concerning the relationship of social roles to mental health are best served by mental

health measures that are, so far as possible, independent of role performance (Wing, 1980b). It was, however, thought important to measure a sense of contentment and well-being, particularly as most studies have focussed on negative hedonic tone.

This component of psychological well-being has been extensively studied by Bradburn and Caplovitz (1965) and Bradburn (1969) in a series of surveys of large samples in the United States. These authors developed a list of items to tap positive and negative affect which they thought would form a unidimensional measure, since they predicted that scores on positive and negative affect would be inversely related. Instead, they found good interitem relationships for each subscale separately, but no relationship between the two. They concluded that the absence of factors producing positive feelings does not necessarily also cause negative feelings or vice versa, and that the relationship between the two was more complex than previously thought. The two dimensions were found to correlate differently with other variables under study. Positive affect was associated with higher levels of social contact and more exposure to new experience, negative affect with indices of anxiety and physical ill health.

Beiser, Feldman and Egelhoff (1972) used Bradburn's scales in a sample of 123 adults participating in the Stirling County study, selected to include equal numbers of men and women, different age groups and those with and without a psychiatric disorder. They obtained a slightly higher degree of association between the two scales. The overall correlation is not reported, but three of 25 product moment correlations

between positive and negative items were significant at the .01 level, with a median correlation of -.05. They found that involvement in formal social activities was associated with contentment across all social groups and for women social activities relating to emotional support were particularly associated. Warr (1978) also used the scales in a study of 1655 British redundant steel workers, 97% of whom were men. The internal structure of the positive and negative affect scales was found to be very similar to that found by Bradburn, but again a somewhat higher level of intercorrelation was found. The median product moment correlation between the two scales was -.08 and the overall intercorrelation was -.21.

Although they did not use the Bradburn scales, a factor analytic study of psychological distress and well-being carried out by Veit and Ware (1983) is relevant here. They used the Mental Health Inventory, which is based on Dupuy's (1972) measure of General Well-being. Mailed questionnaires from 5089 respondents in four different U.S. sites were analysed. They found evidence for a hierarchical model where a general mental health factor underlies two related but factorially separate dimensions: well-being and psychological distress. They suggest that Dohrenwend and his colleagues (1980), in calling for a single factor interpretation of such screening instruments, are losing valuable information. They recommend that positive and negative aspects of well-being should be analysed separately, and that this practice has more predictive power than a unitary concept such as 'demoralisation' (Link and Dohrenwend, 1980).

A final component of positive mental health is a relatively stable, positively evaluated sense of self, since mental ill health is broadly associated with a negative evaluation of self. The relationship of self-esteem to depression is, on a symptomatic level, well documented and almost tautological, since one of the identifying features of the depressive disorders is self-depreciation and loss of self-confidence. However, going beyond this, the ways in which enduring self-esteem deficits might predispose individuals to depressive disorder is complex, poorly understood and inadequately researched. By including a self-esteem measure it becomes possible to examine the relationship of paid employment (and the other social factors under study) to self-esteem, controlling for severity of depression. It was also intended, within the limits of the cross-sectional design, to examine the role of self-esteem as a vulnerability factor.

The term 'self-esteem' is misleadingly simple, but it is likely that different theoretical approaches and measures are tapping different constructs (Wells and Marwell, 1976). Self may be seen as the internal representation or cognitive structure of knowledge of one's own person, but also as a complex, active process influencing perception and representation of events (Gordon, 1968; Markus, 1977; Wells and Marwell, 1976). Gordon (1969) formulates self-conception as the structure of self-referential meanings available to an individual's conscious interpretative processes, positing four levels of self-conception. The first, most concrete level consists of specific self-representations which may be elicited by free response techniques such as sentence completion approaches. The second level consists of systemic senses of

self; competence, self-determination, unity and moral worth. The third
level consists of the sense of personal autonomy. Self-esteem, in this
scheme, is the fourth level. It is seen as the most global and content
free, the evaluation dimension of self-concept. It is this fourth level
which Gordon argues is the common thread integrating the work of
personality psychologists, therapists and social scientists, and he
cites the work of Rosenberg as representing some of the best empirical
work in this field.

Rosenberg (1965, 1967) has an approach to the measurement of self-esteem
"squarely located in the realm of attitudes" and describes his working
assumptions about the self which are of particular interest (Rosenberg,
1967, pp27-29). The self is seen as reflexive, and he notes that in
studies of self-attitudes each respondent is judging a different object.
Self-attitudes differ from others in that the means of influencing them
differ (e.g. mass communication has little effect), the self is an
important object for everyone and, finally, there is a ubiquitous
tendency to strive to hold a favourable attitude towards oneself. (It
can be noted in passing that those with low self-esteem or depressed
individuals do not violate what Allport (1937 p170) calls "nature's
oldest law". For further discussion of clinical theories which explore
the role of depression in protecting the sense of self, see Mollon and
Parry, 1984: Appendix C).

Rosenberg defines self-esteem as expressing the feeling that one is
'good enough'; self acceptance, self worth or (divested of smug
overtones) self satisfaction are synonyms. On the other hand, low

self-esteem in Rosenberg's view represents self rejection, self dis-
satisfaction, self contempt. He conceptualised self-esteem as a unitary
concept, and his measure (Rosenberg, 1965, pp17-18) operationalises the
assumption that there is an underlying unidimensional construct from
high to low self-esteem. There are five positive items (e.g. I take a
positive attitude toward myself) and five negative items (e.g. I
certainly feel useless at times) in the scale. Zeller and Carmines
(1980) comment that:

> "Rosenberg...constructed ten items designed to measure this
>
> unidimensional concept. As evidence for the unidimensionality of
>
> the self-esteem scale, (he) reports its reproducibility of .92 and
>
> its scalability of .72. Rosenberg apparently conceptualizes the
>
> items as forming a Guttman scale in which the items tap the domain
>
> of content in differential degrees of difficulty".

Validity evidence comes from three studies. In the first, 50 normal
volunteers admitted to the ward for research purposes were rated by
nurses. The scale discriminated those thought by nurses to display
depressed behaviour. The second was a group of soldiers unfit for duty
due to psychological problems. Here the scale was strongly associated
with the number of 'psychosomatic' (apparently anxiety) symptoms.
Finally, 272 senior students in Washington high schools formed the basis
of a sociometric study of peer group reputation. The high self-esteem
students were more likely to be chosen by their peers as potential class
leaders.

The scale therefore seems to have the reliability and validity needed for research purposes, and indeed has been widely used (Wylie, 1974, Wells and Marwell, 1976). However, more recently, factor analytic studies have not supported the assumption that it is unidimensional.

Zeller and Carmines (1980) report that two single factors were extracted, principally defined by the items relating to high self-esteem and low self-esteem separately. Zeller and Carmines interpret this as "a function of systematic error: namely response set among the two sets of scale items". Warr and Jackson (1984) replicated the factors in an eight item version of Rosenberg's scale. In order to examine the response set hypothesis, Kirchler (1981) constructed a version of the Rosenberg scale in which each item was also phrased in the opposite way, thus controlling for the content of the items. He argued that the presentation of both forms of each item would mitigate against response set, since subjects would be aware of the correspondence of both forms. Despite this, in a study using a translated version in 173 Austrian students, the same factor structure was obtained. Kirchler interpreted this as being due to the form of wording triggering different anchor points for the positive vs negative items, one being compared to ideal self, the other to a concept of 'not-ideal' self. Although not a response artifact, this phenomenon would not challenge the unidimensional assumption.

A study by Christian (1978) does suggest that the two forms of self-esteem, positive and negative, may be more than simply a statistical or scaling artifact. He used three groups of male volunteers scoring high,

medium and low on Coopersmith's (1967) Self Esteem Inventory. He

elicited self statements, both positive and negative, in the subject's

own words (this would correspond to the first level in Gordon's (1969)

hierarchy). Each characteristic was rated on a 100 point scale for

'importance' and 'saliency'. Although overall the groups differed as

predicted, none of the analyses for positive aspects of self-esteem were

significant, but there were significant differences for negative self

regard score, saliency of negative characteristics and number of

negative characteristics mentioned. In particular, he noted that high

self-esteem individuals had particularly low negative ratings,

suggesting that they do not experience their negative characteristics in

the same way. He concludes that the important difference in

self-esteem is the amount of negative self regard experienced.

This result is consistent with work which finds that, in information

processing terms, depressed patients handle negative feedback

differently from the non-depressed (Post, Lobitz and

Gasparikova-Krasnec, 1980). The non-depressed tend to regulate

self-esteem by counteracting negative feedback, to which the depressed

patient is vulnerable. This is not a question of the depressed

individuals having a 'distorted' view (cf Beck et al., 1979) since

although they are more negative, they are also more accurate than

non-depressed people in assessing others views of them (Lewinsohn,

Mischel, Chaplin & Barton,1980) The ability to 'ward off' negative cues

about the self seems central to mental health.

Because of these considerations, I decided not to adopt the original

scaling procedure used by Rosenberg (1965). Instead, each item was

scored on a three point scale (yes, true; not sure; no, untrue). The positively worded and negatively worded items were summed to give separate scores for positive self-esteem (self worth) and negative self esteem (self depreciation).

Summary of mental health measures used

Present State Examination (short form)

Beck Depression Inventory

Self-rated depression and somatic anxiety scales (Zung and Schalling)

Negative self-esteem scale (Rosenberg)

Negative affect (Bradburn)

Positive self-esteem scale (Rosenberg)

Positive affect (Bradburn)

3.2 Measurement of life event stress

There are two methods of measuring the stress due to life events; by checklist or interview. In the former, respondents are presented with a list of life events and indicate which they have experienced in a given time period. The second method is based on a semi-structured interview which elicits events using standard questions followed by a number of supplementary questions to determine the nature and timing of the event, and to prompt accurate recall of details surrounding it. Each event is then rated. There is no doubt that checklists are more economical of time and resources than expensive and cumbersome interview procedures. For example, over four hours research time is spent on an average life

event interview in real terms (including training, interviewing, writing up and rating). It is therefore something like eight times more 'expensive' than a checklist. This is a scientific as well as an administrative issue, since in a given project, other research questions will of necessity be neglected due to the time given to the procedure. Given this, the choice of an interview in the present study needs to be justified and this requires a brief examination of the problems associated with checklist methods.

Holmes and Rahe (1967) pioneered the use of checklist measures of life event stress in the mid-sixties with the Schedule of Recent Experience (SRE). This determined the frequency with which 43 (later 55) life events had occurred. The Social Readjustment Rating Scale (SRRS) was developed to obtain ratings of the amount of readjustment required after the occurrence of the SRE events (Holmes and Rahe, 1967; Masuda and Holmes, 1967a). Convenience samples were used to derive weightings for the events on the checklist, expressed in terms of Life Change Units (LCUs). Marriage was assigned an arbitrary score of 50 and the judges scored other events in relation to it. It has been claimed that there was general agreement about the relative size of weightings between American respondents from different ethnic groups and social class and samples from Japan and Western Europe (Komaroff et al., 1968; Miller et al., 1974; Masuda and Holmes, 1967b; Harmon et al., 1970; Rahe, 1969; Rahe et al., 1971).

It soon became apparent that there were serious difficulties with the checklist method (Brown, 1974; Rabkin and Struening, 1976; Sarason,

DeMonchaux and Hunt, 1975. Most of these were not overcome by later variants of it, such as by using a more comprehensive list (Cochrane and Robertson, 1973), assessing positive and negative experiences separately with individualised ratings (Sarason, Johnson and Siegel, 1978), or assigning differential weightings for events remote in time (Horowitz, Schaefer, Hiroto et al., 1977). These difficulties can be summarised briefly under three themes; problems with the use of LCU weightings, unsatisfactory reliability and validity, and evidence of systematic under-reporting of events.

Differences between judges of different cultural backgrounds in the magnitude of LCU weightings were found by Askenasy, Dohrenwend and Dohrenwend (1977), who attributed the earlier lack of differences to the use of opportunity samples rather than those representative of the cultural group. This throws doubt on the validity of the scores for samples very different from the original one, as the working class British mothers in the present sample were. More radically, Lei and Skinner (1980) demonstrated that a simple count of events correlated almost perfectly with summed LCUs, as indeed did random numbers used as weights. They could demonstrate no advantage of the LCU computed score over simple addition of events.

Reliability of checklist methods has also proved a major problem. Reported test-retest reliability for specific items rarely exceeds .60 and can be as low as .26 (Casey, Masuda and Holmes, 1967; McDonald, Pugh, Gunderson and Rahe, 1972; Horowitz et al., 1977; Steele, Henderson and Duncan-Jones, 1980). Horowitz et al. (1977) reported agreement

between spouses on the occurrence of a specific event ranging from .46

to .79. These low reliabilities were not due to trivial or ambiguously

defined events; for example, only 69% agreement was reached between

spouses on the birth of their own child! Similar levels of discordance

between spouses on specific events were found by Yager and colleagues

(1981).

It is likely that the single most important cause of reliability

problems is faulty recall of events in the unassisted self report method

(Monroe, 1982). Certainly there has long been evidence of substantial

under-reporting in a variety of samples (Jenkins et al., 1979;

Uhlenhugh, Balter, Lipman et al., 1977), which Monroe (1982) reports may

be as high as 60% of events for even the most recent four month period.

Validity estimates vary. Hurst, Jenkins and Rose (1978) found that the

SRE correlated at .77 with Paykel's (1971) form of life event

measurement, but that the distributions of scores were significantly

different. Katschnig (1980) compared the SRE to Brown and Harris's (1978)

Life Events and Difficulties Schedule, finding a correlation of only .11

between the two instruments. Part of the validity problem is that a

number of the events to be rated could equally well be symptoms of

illness (Paykel, 1983; Dohrenwend et al., 1984).

Because of these considerations, checklists can be seen only as

approximate estimates of life event stress, suitable for assessing

overall group differences in large samples, but with serious

difficulties when more specific predictions about at-risk groups are

needed. The total sample size is not the only consideration. In particular, when a number of social factors are studied in combination (as in the present study) the number of respondents in crucial cells can become relatively small despite an apparently adequate N. In such circumstances, the most reliable and valid method possible is necessary to prevent errors swamping potentially important findings. These psychometric problems led Paykel (1983) to conclude that self-report questionnaires are "inadequate for the 1980s; some form of interview method should be used."

The advantages of an interview method in overcoming problems of under-reporting are obvious, summarised by Yager et al. (1981, p.347) as increasing subjects' motivation and involvement, clarifying ambiguous meaning of items and resulting in a more accurate time framing of event occurrences. The best known interview method is that developed by Brown and his colleages, the Life Event and Difficulties Schedule (LEDS; Brown and Harris, 1978), although Paykel's interview has similar advantages (Paykel, 1983). A number of British researchers have been trained in the LEDS, making it possible to obtain data which are directly comparable. This semi-structured interview covers the previous 12 months of the respondent's life experience in ten domains; health, role changes, leisure and interaction, employment, housing, money, crises, forecasts, marital and parental interaction. Both specific events and longer term difficulties are elicited. The interviewer explores systematically various aspects of the event in terms of timing, place, routine change, independence from the respondent, preparation, warning, symbolic significance, interaction change, routine change, etc. Difficulties are

explored in terms of objective evidence for the problem and the length
of time over which it has existed. The interview is tape-recorded, thus
allowing all events in chronological order to be written out with the
major features described so that each one can be 'contextually' rated.
The respondent's own reaction to the event is not taken into account
here, but the method is sensitive to differences in stressful impact of
the same event taking place in different contexts. This method
therefore steers a course between 'normative' ratings which may be
culturally inappropriate and certainly insensitive to the meaning of the
event for an individual, and subjects' own ratings which are hard to
disentangle from mood and clinical status. A dictionary of precedents
is consulted by independent raters who meet to arrive at a consensus.

The most important ratings in terms of the present research are
'contextual threat'. These cover the degree to which the event is
threatening in the short-term (same day) and the long-term (the
perspective at the end of a week). These are rated on a four point scale.
In addition, a rating is made of who is the focus of the event (the subject or
someone else). The importance of the focus rating is not altogether
clear, since 'threat' is always rated in terms of the subject herself.
However, Brown and Harris (1978) use the focus in making a distinction
between those events which were severely threatening and others. This
distinction was found empirically to be important by them , since only
severely threatening events had a role in precipitating depression.
Severe events are characterised by (if the focus is the subject)
long-term threat which is 'marked' or 'moderate', or (if the focus is
the other) 'marked' long-term threat. Inter-rater reliability for these

ratings were highly satisfactory within Brown's group (Tennant, Smith

Bebbington and Hurry, 1979). The reliability data within the team in

the present study are reported in 5.2. In general, interview methods

have been found to have better reliability than checklists (Paykel,

1983). For example, Brown, Sklair, Harris and Birley (1973) reported

patient-informant reliability of 79-81%, comparable to Saxena, Mohan,

Dube et al's (1983) estimate, using a different interview procedure, of

86%.

In the present study, Brown's method of dichotomising events into

'severe' and 'non-severe' was adopted, analysis of variance or logistic

analysis of contingency tables being used to analyse event stress in

this form. This was the method used when screening the pool of

respondents in order to select those with 'high' life event threat (see

Chapter 4). Later, before the data were analysed, those women who had

experienced a 'neutralising' event since the severely threatening event

were removed from the high threat group. A neutralising event is one

which "caused minimal threat to the subject...and which substantially

negated or counteracted the impact of an earlier threatening event..."

(Tennant, Bebbington and Hurry, 1981b p.214). For example, an

unexpected redundancy in the context of financial hardship and

outstanding debt may be rated as severely threatening, but a subsequent

job offer would reduce the threat markedly. Tennant et al. (1981b) found

such events were significantly implicated in remission of symptoms.

After some consideration, it was decided not to use Brown's criterion of

'major long term difficulty' as grounds for inclusion in the high life

event stress group. Brown classifies non-health difficulties of marked severity which have lasted two years or more as 'provoking agents'. It was thought hard to justify on conceptual grounds the equation of chronic difficulties with life event stress. Instead, difficulties were rated using Brown's method (a seven point scale) and analysed separately.

In addition to the categorical form of life event stress, a continuously distributed variable was calculated by reversing Brown's scale (e.g. a 'marked' threat score of 1 would be reversed to 4) and summing the total. The same procedure was adopted for the difficulties, reversing a score of 1 to 7, 2 to 6 and so on. These scores were then used in multiple regression analyses.

3.3 Measurement of social support

Compared with the assessment of life event stress, measures of social support have not progressed far. The term itself is conceptually diffuse and the variety of definitions has inevitably led to different researchers operationalising different constructs. As apparent in sections 2.2 and 2.3, studies of social support have in fact examined specific variables as diverse as network size, marital status, perceived availability of help in a crisis, presence of an intimate confiding relationship, membership of community groups, self-reported satisfaction with support received and behavioural tallies of supportive acts. In addition, authors have repeatedly mentioned the lack of measures with good psychometric properties (Dean and Lin, 1977; McFarlane et al.,

1981; Leavy, 1983). However, the recent development of standardised measures (Procidano and Heller, 1983; Sarson et al., 1983; Flaherty et al., 1983; Orritt, Paul and Behrman, 1985) may prove to be only a partial solution to what is, at root, a conceptual rather than psychometric problem.

At the time when measures for the present study were selected (or decisions made to develop them), there were very few published measures of social support. It seemed best to design indices based on items directly relevant to working class mothers, paying attention to the major measurement problems within this field. Of course, at the completion of the study many more published measures of support were available, but, even now, this strategy would not be ill-advised. Wortman (1984) remarks that "Although such scales appear promising, their reliability and validity for general use have yet to be established" and goes on to point out the advantages of measures that are appropriate for a particular population. The measures themselves are described in Chapters 6 and 8. Here I shall review briefly some of the theoretical considerations which informed their design.

Definitions and social support taxonomies

The lack of any theoretical consensus in the study of social support has been noted by several authors (House, 1981; Thoits, 1982). There is not merely conceptual pluralism, a good thing in a relatively young field, but also definitional and taxonomic confusion. Many authors have used vague and circular definitions of social support; for example, "support

accessible to an individual through social ties to other individuals groups and the larger community" (Lin et al., 1979) and "support is defined by the relative presence or absence of psychological support resources from significant others" (Kaplan et al., 1977). More precise definitions have been given, for example:

"information leading individuals to believe (they) are 1) cared for and loved, 2) esteemed and valued; and that they 3) belong to a network of communication and mutual obligation" (Cobb, 1976, p.300).

"interpersonal transactions that involve the expression of positive affect, the affirmation or endorsement of the person's beliefs or values and/or the provision of aid or assistance" (Kahn and Antonucci, 1980).

"the degree to which a person's basic social needs are gratified through interaction with others" (Kaplan, Cassel and Gore, 1977).

"behavior which assures people that their feelings are understood by others and considered normal in the situation" (Walker, MacBride and Vachon, 1977).

Although these definitions differ in which aspect of the support process they emphasise, House (1981) believes that there is some consensus about the aspects of relationships that are within the general domain of social support.

One reason for lack of definitional precision may be that the term 'social support' is a portmanteau for a number of conceptually distinct psychosocial processes. This concern has led to a number of discussions which analyse different types of support. One of the most intelligent is still the one by Weiss (1974), who drew attention to the distinction, already familiar to sociologists, between primary relationships characterised by commitment, warmth and attachment, versus secondary relationships which are instrumental. Beliefs, attitudes and understandings are formed in the primary group and morale in adulthood depends on continued primary group affiliations. It is not clear to what extent less intimate relationships may compensate for lack of a primary one (we can recall that Miller and Ingham, 1976, found evidence consistent with this), but Weiss argues that different needs are typically met by different forms of social tie. For example, there is a difference between the loneliness of social isolation and the loneliness of emotional isolation. He identifies six categories of 'relational provision': attachment, social integration, opportunity to nurture, reassurance of worth, reliable alliance and guidance. Taxonomies have also been developed by House (1981), Caplan (1974) and Cobb (1976). Wortman (1984) draws from all these to derive six categories of support:

expression of positive affect (including information that one is loved, cared for and esteemed);

expression of agreement with (or acknowledging appropriateness of) a person's beliefs, interpretations or feeling;

encouraging the open expression of beliefs and feelings;

offering advice or information, or access to new, diverse information;

provision of material aid;

provision of information that the person is part of a network of mutual obligation or reciprocal help.

Many studies of social support in the field of mental health have not attempted to come to terms with different types of support, relying instead on global, unidimensional measures. Often these tap self-reported satisfaction with support or perception of how much support would, hypothetically, be available if required. This approach leads to two difficulties. First, the lack of specificity makes inferences about the differential importance of types of support impossible. Second, correlations between perceived support and mental health outcomes are likely to be inflated because each is tapping variance in well-being.

Specific versus global measures of support

However desirable it is to be specific in measuring support, a balance has to be found. In practice, it may be difficult to operationalise each of the six types of support mentioned above in a way which is empirically distinct. The first three, for example, would certainly be highly correlated. There are also practical constraints on the number

of separate measures it is possible to incorporate into a research

protocol when support is only one of a number of social factors under

study. For these reasons, a broad distinction was made in the present

research between expressive and instrumental support (Thoits, 1981;

Kaplan et al., 1977). This intermediate level of abstraction captures

perhaps the most central distinction in the support taxonomies:

intimate, affective interaction with primary group members, providing

love, nurturance, opportunity for expression of feelings, as distinct

from secondary, instrumental relationships providing material aid,

information and membership of a wider network and community.

Expressive support has been emphasised in a number of studies already

discussed (see sections 2.2 and 2.3). Henderson (1977) sees attachment

bonds as a most important and neglected aspect of adult functioning. He

pointed out that attachment issues are implicated in most of the psycho-

social stress processes. Many stressful events involve disruption of

social ties and all four of Brown and Harris's (1978) 'vulnerability

factors' can be seen in terms of relational deficits.

Brown and Harris (1978) measured the degree to which a woman had an

'intimate confiding relationship' by asking whether, if she needed to

talk something over, there was anyone to whom she would turn to share

her troubles with. Further questions ascertain if the confidant is

complete or partial, whether the confiding relationship is seen as

reciprocal and estimate the frequency of contact with the confidant.

Four categories of support were established, with the most supportive

usually defined as spouse or cohabitee (or other relationship with the

quality of a 'marital' tie), then a confidant other than the husband seen more than once per week, a confidant seen less frequently and finally, no confiding relationship. Surtees (1980) used an index of 'close social support' which included ratings of confiding relationship, frequency of contact with close relatives, and 'living group' rating according to whether the respondent lived with spouse, close relatives, lodgings or alone. Henderson et al. (1980) measured both availability and perceived adequacy of 'close affectional ties'.

Instrumental support has been assessed in various ways, often in terms of 'diffuse' ties (Henderson et al., 1980; Surtees, 1980). The degree of contact with work associates, contact with neighbours and attendance at clubs and community associations is included here. However, measures of social contact are only indirectly tapping support and it also seems important to include the availability of practical aid as part of instrumental support.

Problems of confounding support with mental health

The subjective measures of support that have often been used are, of course, open to the criticism that they reveal more about the individual than about their social environment. Henderson et al. (1981) were concerned, when they found that only their indices of perceived adequacy of support had substantial predictive power, that the perceptions could be "measures not of social relationships but of the respondent's habitual pattern of construing events in his day to day life" (p.194). Indeed, one research group has emphasised that perceived social support

is an individual difference measure associated with attitudes, person-
ality characteristics and life experience (Sarason and Sarason, 1982;
Sarason, Sarason and Shearin, 1986). There is a particular danger that
depressed mood could, in itself, alter a person's perception of how much
support they had available. Items on some social support scales seem to
be directly tapping depressive symptomatology; for example, "You have
been bothered by not having someone who shows you love and affection" or
"You have been having problems communicating with others" (Lin, Dean and
Ensel, 1981). Dohrenwend et al. (1984) investigated this by asking 371
practising clinical psychologists to identify whether or not an item was
a symptom of psychological disorder. They found that the Lin et al.
(1981) Instrumental-Expressive social support scale had more than
two-thirds of its items rated 'more likely than not to be symptoms'.

There are a number of ways around this problem. First, it is possible
to investigate only structural characteristics of the respondent's
network, such as size, density, etc. Second, it is possible to
concentrate on behavioural acts of supportiveness rather than the
respondent's feelings of being supported. Third, external raters can
make a judgment of how supported the respondent is on the basis of
relatively objective data. Finally, questions which directly tap
satisfaction with and perceived adequacy of support can be avoided.

The first two methods, although having merit, were not adopted in the
present study, as it was felt to be too time-consuming and difficult to
make an assessment of social network characteristics or specific
behavioural acts. The latter two approaches were adopted. In

particular, it was felt that expressive support was likely to be more reactive to depressed mood than instrumental. For this reason, expressive support was rated by three independent judges on the basis of standard information. One important component of this information was an hour by hour time log of whom the respondent had seen and what had been discussed in the week before interview. It was felt that this specific level of detail in a standard time period for all respondents would militate against the ratings being over-influenced by respondent's perception of whether support was available. However, the respondent's definition of who was or was not a confidant and who was a member of the primary group were also taken into account. It was decided to use a within-sample comparison to make ratings of 'high', 'medium' and 'low' expressive support rather than predefine an absolute standard for these categories by reference to external criteria. For this reason, 15 protocols taken at random were rated consensually to provide decision rules for the 'high' and 'low' categories. The other protocols were then rated independently. Details are given in Chapter 8.

Since expressive support could not be rated until after interviewing was completed, the measure of instrumental support was used to assign mothers to 'high' and 'low' support groups during the screening process. This index assessed, through seven questions asked at interview, availability of material and practical aid, contact with local medical resources and membership of community groups such as church or social clubs. To implement the screening procedure, after the first 50 women had been interviewed, their summed scores were calculated and those above and below the median were designated as having high and low

instrumental support respectively. Instrumental support was analysed both as a continuously distributed variable and as a binary variable.

A final problem is the one already mentioned in 2.3, that social support and life event stress are neither conceptually nor empirically separable. Of course, the major strategy adopted in the present research to examine them independently was the sampling procedure, which ensured that adequate numbers of mothers with low stress and high support (and vice versa) were interviewed. However, a further methodological decision was made; no woman would be rated as experiencing a major difficulty on the basis of information about social support deficits.

CHAPTER FOUR: RESEARCH SAMPLES

This brief chapter will provide an overview of the samples used for scale development and the study itself, described in Chapters 5 and 6.

4.1 Scale development samples

Prior to the study proper, work was needed to develop measures of women's sex role beliefs and home and employment role attitudes. The Zung self-rated depression scale was also piloted, in order to develop a short form. The development of these measures is described in Chapter Five.

Sample 1: Working class mothers (Sheffield)

This sample was used to develop the measure of sex role beliefs and a short form of the Zung scale. After access had been negotiated with the Education Authority and the Head Teachers, postal questionnaires with accompanying letters were sent to 200 mothers of children attending two schools (a first and a middle school) in a working-class area of Sheffield (Crookesmoor). Of the 128 questionnaires returned, 104 were from women rated working-class on the basis of her own or her husband's occupation, whichever was the higher. (Registrar General's classification, social classes IIIM, IV and V). This sample was used to examine the psychometric properties of the British Attitudes to Women Scale (see 5.3).

Door-to-door follow up was then undertaken on a random half of the non-responders. Using this method, the Zung scale was obtained for a further 28 working-class respondents. For most of these respondents it was possible to check the paper and pencil responses by further questioning. The final sample used for the development of the short Zung scale consisted of 132 mothers (5.1). The Zung scores of the original and the follow up sample were almost identical, suggesting that the non-responders did not differ on clinical criteria from the responders.

Sample 2: Working class mothers (UK)

This sample was used to develop the measure of mothers' attitudes to their home and employment roles. Women were contacted via a market research firm (National Opinion Polls), where an interviewer called on the mother, left the questionnaire and collected it later. The sample consisted of 185 women identified as working-class using the same criteria as in the Crookesmoor sample. Approximately equal numbers of women were sampled from ten towns in the South, Midlands and North of England, Scotland and Wales. Quotas were established so that approximately equal numbers of women were sampled with full time, part-time and no paid employment. The women were all married, living with their husbands and had children under the age of 14. Details of the study are given in 5.4.

Sample 3: Psychiatric outpatients

The Zung scale and its short form were also examined in a clinical

sample. Local psychiatrists and clinical psychologists co-operated by

administering the scale to outpatients who had been referred with a new

acute episode of psychiatric disorder. This is an unselected clinical

sample. Questionnaires were returned for 44 men and 56 women. Of these

women, 27 were between the ages of 25 to 45. Results are given in 5.1.

4.2 The study sample

Seven working-class areas of Sheffield were identified from the 1977

Household survey (1. Wincobank; 2. Central Sheffield; 3. Kelvin Flats;

4. Walkley; 5. Parson's Cross; 6. Pitsmoor and 7. Manor). The

geographical distribution of respondents from these areas is shown in

Figure 4.1. The percentage proportions of the final sample interviewed

from each of the areas is as follows: 15, 9, 17, 14, 25, 9, 11. Health

visitors assigned to these areas were contacted via their senior

management and provided access to their record book of women who had

received a 'new birth visit' (that is ten days post partum), between

four and seven years previously. Health visitors receive routine

notification of births so that this is an unbiassed sample of such

mothers. Mothers were contacted via letter followed within one week by

a home visit to explain the project and to obtain informed consent. Any

woman who fell in the following groups was not interviewed:

FIGURE 4.1
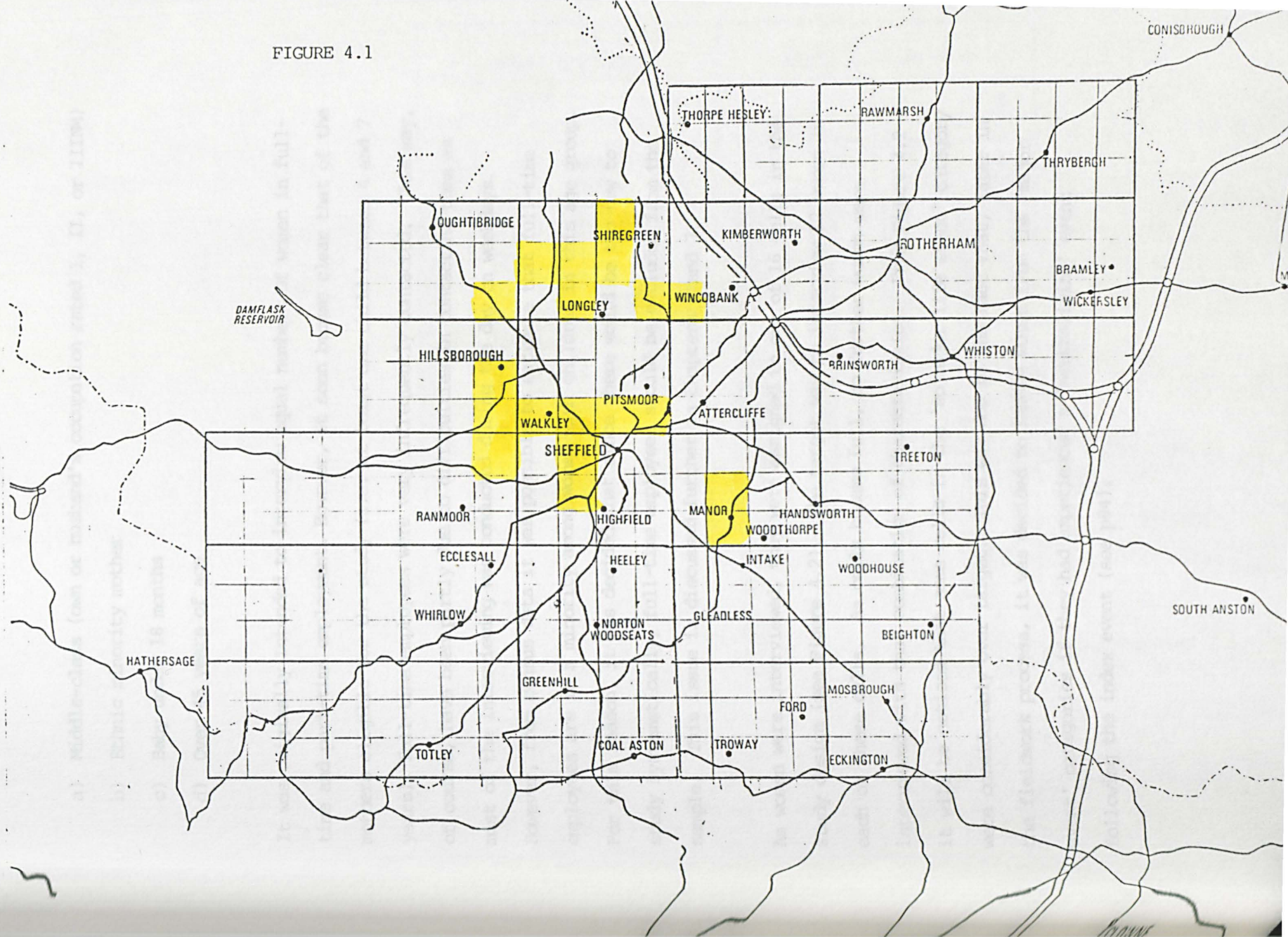
a) Middle-class (own or husband's occupation rated I, II, or IIINM)

b) Ethnic minority mother

c) Baby under 18 months

d) Over 45 years of age

It was originally intended to interview equal numbers of women in full-time and part-time employment. However, it soon became clear that of the mothers eligible for the study (i.e. at least one child between 4 and 7 years), full-time employees were very infrequently contacted. This may, of course, have been partly due to difficulties in contacting them as most of the interviewing was conducted during the day on weekdays. However, from census data it was possible to estimate that full-time employees are in a minority among women with children in this age group. For this reason, it was decided that since there would be too few to study systematically, full-time employees should be excluded from the sample. This issue is discussed further in Chapters 6 and 7.

As women were interviewed, they were assigned to one of 16 cells in the study design (see Figure 4.2). The target was to interview 12 women in each of these cells. As cells became full, no further women were interviewed with that combination of characteristics. From Figure 4.2 it will be noticed that some cells in the 'no major life event' category were considerably over target. This was due to the fact that, later in the fieldwork process, it was decided to remove women from the 'major event' categories if they had experienced a 'neutralising' event following the index event (see p94).

Figure 4.2: <u>Achieved cell frequencies in final sample (target n per cell = 12)</u>
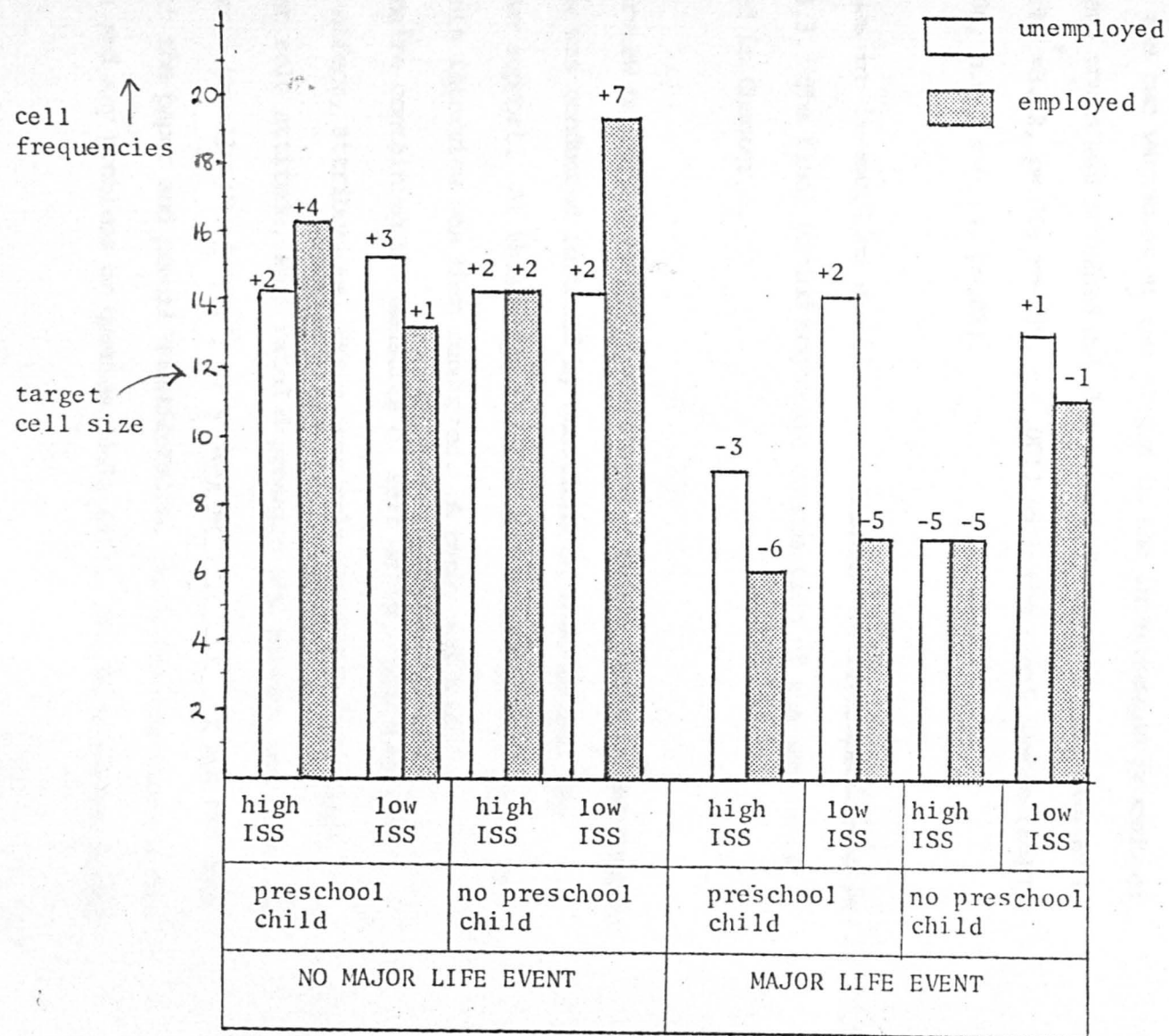
Six of the sixteen cells fell below target, but nevertheless it was

necessary to discontinue fieldwork due to time and financial

constraints. It will be seen from Figure 4.2 that targets for mothers in

the high stress and high support groups were particularly difficult to

reach, due to the inverse correlation between these variables discussed

earlier. This correlation was considerably reduced by the screening

procedure though, as can be estimated by comparing the relationship

between the two variables at two stages in the interviewing procedure:

before any woman was screened out due to being excess to cell targets

(n=67, chi^2=3.52, p=.06; r=-.39, p$<$.001) with the final sample (n=193,

chi^2=0.06, n.s.; r=-.14, p=.02).

The stages in the sampling procedure are diagramatically represented in

Figure 4.3. The final sociodemographic composition of the sample is

described in Chapter 6.

The interview procedure was in three stages. First, the sociodemographic

interview was conducted followed by questions on instrumental and

expressive support. At this stage the one week time log was taken. The

life events interview was then conducted. A paper and pencil

questionnaire containing the measures of self esteem, positive and

negative affect, attributional style, sex role attitudes, home and

employment role attitude, self rated depression and anxiety was given to

the mother. Usually the interviewer made a second visit within two days

to collect the paper and pencil questionnaire, check the questions were

filled in and any problems or queries dealt with. The Beck inventory was

Figure 4.3


```
┌─────────────┐      ┌─────────────┐      ┌─────────────┐      ┌─────────────┐      ┌─────────────┐
│ Women       │      │ preliminary │      │ screening   │      │ suitable for│      │ interview   │
│ approached  │─────▶│ information │─────▶│ interview   │─────▶│ interview   │─────▶│ completed   │
│ from birth  │      │ n = 710     │      │ n = 541     │      │ n = 243     │      │ n = 193     │
│ register    │      │             │      │             │      │             │      │             │
│ n = 812     │      │             │      │             │      │             │      │             │
└─────────────┘      └─────────────┘      └─────────────┘      └─────────────┘      └─────────────┘
```

no information
n = 102

moved away
n = 169

unsuitable
for inter-
view:
middle class
excess to
cell
young baby
ethnic group
age > 45 yrs
n = 298

not
interviewed:
refusal
default
during
interview
n = 50
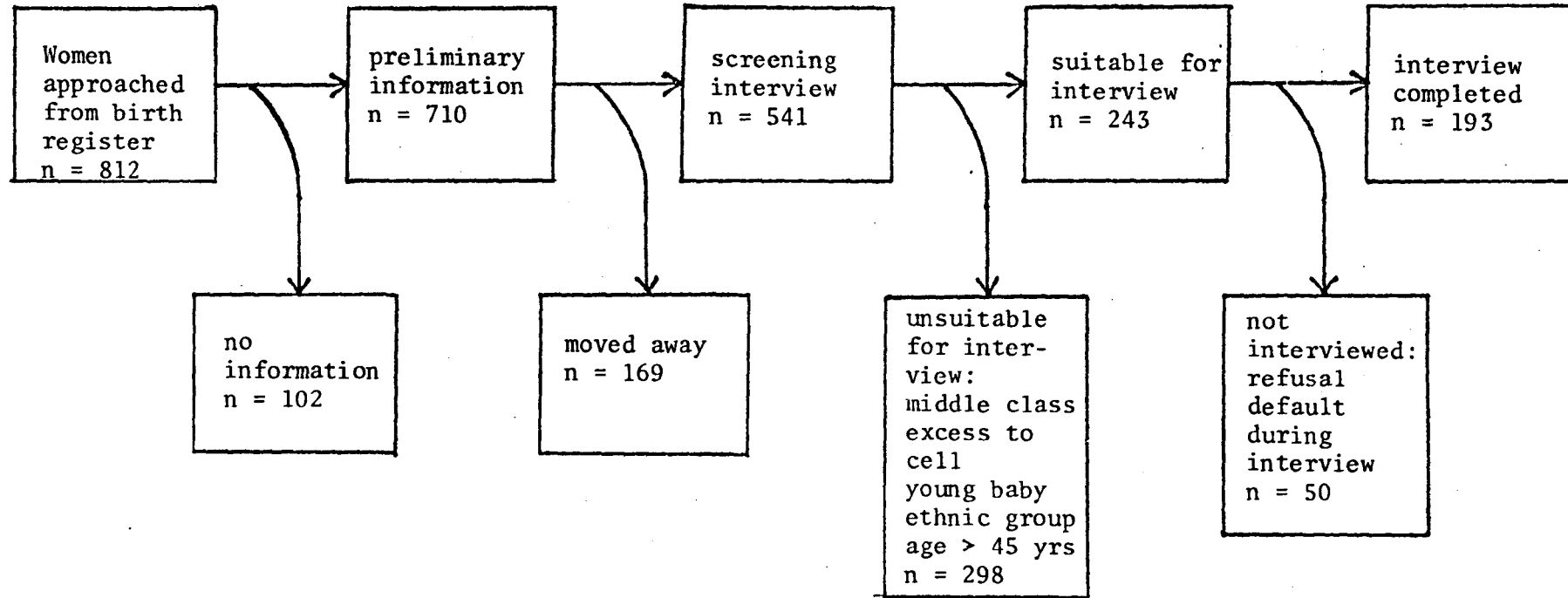
Stages in sampling procedure.

then administered, followed by the Present State Examination. Sometimes all the interview procedure was completed on one occasion, in which case the paper and pencil questionnaire was collected later, usually within a few days. In every case the life events interview was conducted before the clinical interviews so that the interviewer was, if not blind to, at least not systematically cued in to the mother's clinical condition.

CHAPTER FIVE: SCALE DEVELOPMENT

5.1 Development of short form of the Zung Self Rated Depression Scale

To obtain a measure of well-being which would be both clinically

relevant and acceptable in the present research setting, a short form of

the Self-rating Depression Scale (Zung 1965, 1974) was developed. The

complete version of this contains 20 items tapping affective,

physiological, psychomotor and psychological disturbances. The scale

was intended to measure depth of depression, whether or not this occurs

as a diagnosable disorder in itself.

The present short form was derived from nineteen of these items using

data obtained from a separate postal survey of 132 working class

mothers. (The item 'I still enjoy sex' was omitted in these

circumstances to maximise the response rate.) Twenty respondents were

subsequently interviewed to check that there were no major discrepancies

between their unsupervised responses and those obtained with

face-to-face contact. As a result of this, the item "I find it easy to

do the things I used to" was omitted from further analyses, as it was

found unreliable in this population; a negative response often

reflected material rather than psychological constraints.

For the remaining 18 items, corrected item-whole correlations were found

to range from 0.27 to 0.63. The six items with the highest corrected

item-whole correlations (above 0.56) were selected for incorporation into the scales. These were as follows: My life is pretty full; I feel that I am useful and needed; I have crying spells or feel like it; my mind is as clear as it used to be; I feel downhearted and blue; I still enjoy the things I used to. The items derived by this method include those two which in the original scale covered affective disturbances and four of the eight covering psychological disturbances. Physiological and psychomotor items were found to be relatively poor predictors of the total score in this population. Response alternatives were: little or none of the time, some of the time, good part of the time, most of the time. These were scored 0 to 3, with reversal of weights as necessary, to yield totals potentially ranging between 0 to 18, where a high score indicates depressed mood.

This 6-item measure proved to be very acceptable to respondents, but does it tap principal features of depression? Evidence from both general population and psychiatric outpatient samples is presented in Table 5.1, where comparisons are possible with the 19-item version of the Self-rating Depression Scale.

The first two samples in Table 5.1 are of non-clinical respondents, and mean scores are low with responses skewed towards the non-depressed pole. However, scores for the two clinical samples were found to be normally distributed around means which are substantially higher and close to the mid-point of the possible range. The mean scores for depressed mood on the 6-item scale mirror those from the longer scale which has been widely used, and within each sample the correlations

Table 5.1: Descriptive statistics for the 6-item measure of depressed mood and the 19-item Self-rating Depression Scale; and the observed correlation between the two scores.

Sample	n	6-item scale		19-item scale		r
		Mean	S.D.	Mean	S.D.	
The present respondents	182	3.84	3.07			
Other working-class mothers in a community survey	132	4.66	3.91	16.46	9.23	0.88
Acute psychiatric out-patient referrals, women aged 25-45	27	9.67	3.94	27.30	9.00	0.88
Acute psychiatric outpatient referrals, men of all ages	44	7.52	3.86	22.32	9.25	0.84

between the two forms (in the right-hand column) are very high (being naturally elevated by auto-correlation). Furthermore, the alpha coefficient of internal consistency (Cronbach, 1951; Novick and Lewis, 1967) was clearly acceptable in all cases: 0.68, 0.77, 0.81 and 0.71 respectively for the four samples in Table 5.1. We conclude that the 6-item measure of depressed mood is adequately valid and reliable for research of the kind described here.

5.2 Reliability of life-event ratings: An independent replication

Despite the recent proliferation of studies measuring life-event stress, there remain only two main methods of assessment. The first uses a standard checklist of events assigned a priori weightings derived from a rating sample (Holmes and Rahe, 1967). The second method, Brown's 'London measure' (Brown and Harris, 1978) uses a semi-structured interview to elicit information concerning life events and circum- stances. Trained interviewers also act as raters, assessing on four-point scales the degree of 'threat' associated with each event. With knowledge of subjects' social context, but ignorant of their psychiatric or emotional reactions, each rater makes three judgments: the event's short-term threat, its long-term threat (at the end of a week) and its focus (for example, 'subject' or 'other'). Raters then meet to pool judgments, and a consensus is reached. Recently, an extensive 'dictionary' of precedents has been compiled by Brown's group, to aid the rater in assigning 'threat' scores.

The checklist method is by far the more widely used, owing to its simplicity, availability and economy. However, it has been widely criticised for oversimplification of complex issues, and doubts have been raised about its validity, retest and inter-rater reliability (Tennant et al., 1979). Katschnig (1980) has shown that whilst the Holmes-Rahe and Brown measures yield comparable results using a simple correlation over grouped data, for individuals the two methods can give discrepant results, implying that the two methods are not inter-changeable. Although it is relatively cumbersome and expensive, the London measure promises significant advantages in its thoroughness and subtlety. Brown and his colleagues have made their method available by training and supervising others in its use. Following this training, researchers work independently, and increasing numbers of studies using the measure are forthcoming. Levels of inter-rater agreement in these circumstances are unknown, and doubts have already been raised (M.B. Shapiro, 1979). Existing reliability data are sparse. Brown and Harris (1978) report their data incompletely in a footnote, using inappropriate product moment correlations. Tennant et al. (1979) showed very satis-factory agreement within Brown's group. However, they misreported Brown's reported reliability of long-term threat as 0.90 when the actual figure was 0.75, and they chose not to report their own data for short-term threat or focus ratings. Their own study suggests that raters can attain high reliability soon after initial training, but no evidence exists concerning the maintenance of agreement over a long period of research, by independent groups with turnover of interviewing and rating personnel. These are the circumstances under which most data using the London measure are collected.

The present study reports inter-rater agreement data from a group researching employment, self-concept and depression in working-class mothers of young children. Data from 381 life-events are reported, rated over a period of eight months. At any one time three raters made judgments of events, based on the interviewer's written account of the event and context, independently of each other but with access to the life-events dictionary. On two occasions an interviewer left the team and was replaced, so that five raters were involved in all. All five were social science graduates, and one a clinical psychologist. Four received a one-week initial training from Brown's group, who subsequently monitored their recorded interviews. The fifth was trained by the existing Sheffield group.

For short-term and long-term threat, agreement was calculated using Kendall's coefficient of concordance (W), which is suitable for ordinally scaled data, although taking no account of chance agreements. Over 381 events, Ws were 0.84 and 0.81 respectively. The nominally scaled focus data yielded an overall kappa of 0.78, using Fleiss's (1971) procedure.

W and kappa coefficients were calculated for threat and focus ratings, respectively, for each of nine overlapping blocks of 76 events (comprising events 1-76, 39-114, and so on). There was no evidence of decaying agreement; if anything, the reverse was true, with slightly rising trends interrupted only by temporary deterioration associated with the recruitment of a new rater. Thus, Ws for short- and long-term threat began at 0.83 and 0.78 respectively, reaching 0.88 and 0.84

respectively, before falling to 0.76 and 0.80 with the recruitment of a
new rater, and recovering within some 50 events to reach 0.87 and 0.85
at the end of the series. Similarly, kappas for focus began at 0.73,
fluctuating somewhat but rising to 0.81 before falling to 0.76 at the
recruitment of a new rater, and recovering to 0.86 by the end of the
series.

For all the events gathered by each of three interviewers, Spearman's
rank order correlations were obtained between the three pairs of raters,
and correlations involving the interviewer were compared with those
between the non-interviewer pair. If the interviewer had been
influenced by her subjective experience of the interview, not communi-
cated in writing to the other raters, her ratings would tend to be
discrepant. No trend of this kind was obtained, however, with
correlations involving the interviewer sometimes higher and sometimes
lower than those not involving the interviewer, and no differences
approaching statistical significance.

Although these results are not directly comparable with those of Tennant
et al (1979), owing to differing statistical procedures, they are of a
comparable level of significance. Short-term threat was slightly, but
consistently, more reliably rated than was long-term threat. Agreement
fluctuated somewhat more for focus than for the threat ratings.

Although the necessity or otherwise of initial training with Brown's
group cannot be ascertained from the present data, we can conclude that

the London measure of threatening life-events can be used reliably by research groups working independently.

5.3 A British version of the Attitudes towards Women Scale (AWS-B)

The Attitudes towards Women Scale (AWS) is a 55-item Likert-type scale devised by Spence and Helmreich (1972). These items consist of statements about the roles and behaviours of women in a comprehensive range of areas, each item having a traditional-liberal response dimension. From this pool of items, a short version of the AWS was developed (Spence et al., 1973).

Using data derived from 241 female and 286 male American psychology students, items were selected for the short form by dividing subjects into quartiles on the basis of their total AWS scores, for each sex separately. Twenty-five items which discriminated between subjects for each quartile and which also had the highest biserial correlations were selected. The resultant scale had extremely high correlations with the full version for both male and female students, and also for a sample of adults, who were the mothers and fathers of the students in the validation sample (0.97, 0.97, 0.96 and 0.96 respectively; figures include auto-correlation). Uncorrected item-total correlations for the students on the short form ranged between 0.31 and 0.73, with the modal value for both sexes in the 0.50s. All rs were significant at the 0.001 level.

The same pattern of findings emerged for both forms of the scale: female students were significantly more liberal than male students, mothers than fathers, and students than parents. Given this, and the high correlation between the long and short form, it has been assumed by researchers that the short form is a valid and reliable instrument to measure attitudes to the rights and roles of women in contemporary society. Although it is not the only available measure of sex-role ideology (Kalin and Tilby, 1978), it has continued to be widely used in research of diverse kinds (see, for example, Colker and Widom, 1980; Vaughn and Wittig, 1980).

However, despite the good psychometric properties of the short AWS, a problem arises when research into sex-role ideologies is undertaken with samples from a disadvantaged educational background or with British samples. Many of the items in the AWS are not suitable for these groups. Examples of such items include: 'Under modern economic conditions with women being active outside the home, men should share in household tasks such as washing dishes and doing the laundry'; and 'Economic and social freedom is worth far more to women than acceptance of the ideal of femininity which has been set up by men'. As part of a large-scale study of aetiological factors in depression among working-class mothers, a British version was developed.

Scale development procedure

Of the 25 AWS items, 22 were simplified and anglicised. For example, the two items given above were reworded as: 'If a woman goes out to work

her husband should share the housework, such as washing dishes, cleaning and cooking'; and 'Women are better off having their own jobs and freedom to do as they please rather than being treated like a lady in the old-fashioned way'. The remaining three items did not translate readily into simple forms, and given that the number of scale items was to some degree arbitrary, these three were omitted. This scale was administered to 104 working-class mothers. Socio-economic status was assessed using the Registrar-General's classification, taking the higher status job as the criterion if both the woman and her husband were employed. All women were in socio-economic groups IIIM, IV or V. The women's ages ranged from 21 to 50, and all had at least one child aged between 5 and 13 years. Each item had five response alternatives (disagree strongly, disagree, neutral, agree, strongly agree) scored 0 to 4; 0 being the most traditional response, 4 the most liberal. It was found that uncorrected item-total correlations ranged from 0.24 to 0.63.

A comparison between two samples

Data on the AWS-B are also available from 100 middle-class professional women, interviewed as part of a separate study. These were senior or principal officers in local government and were in socio-economic groups I and II. Of the total, 27 per cent had dependent children, 50 per cent were graduates and 73 per cent had had an uninterrupted employment history. Their ages ranged from 25 to 62. It was predicted that these women would hold more pro-feminist views about the position of women than the working-class group. A seven-point scale was used, the means

and standard deviations being adjusted for the purpose of comparison.*
Inspection of the item means revealed that the two samples tended to
have similar profiles of which items evoked relatively liberal or
traditional responses. However, as predicted, the middle-class women
were consistently more liberal over the scale. The item about pre-
marital sex was found to be anomalous. In addition, some respondents in
both samples had remarked that they found the wording of this item
ambiguous, as it is not clear whether it was only women and not men who
should not have sex before marriage. For these reasons, item 16 was
omitted, resulting in a scale consisting of 21 items (see Table 5.2). The
mean total score for the working-class group was 49.98 (sd=9.11) and for
the middle-class group 62.30 (sd=10.83). This difference was highly
significant (t=8.80, p$<$0.001). The scores ranged from 25-77 and from
41-83 respectively. Coefficient alphas (Cronbach, 1951) for the
working-class and middle-class women were 0.77 and 0.85 respectively,
showing the scales to have acceptable internal reliability.

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*Internal consistency, test-retest reliability, concurrent validity and
predictive validity are independent of the number of points used on a scale.
Means were adjusted by the formula:

$$x_5 = \frac{\overline{x}_7 - 1.5}{1.5} + 1; \text{ and standard deviations by } \sigma_5 = \frac{\sigma_7}{1.5}$$

The subscript refers to either the seven-point or the five-point scale.
This procedure ensures that the mid-points and the two extremes are
equivalent on the two scales.

Table 5.2: AWS-B items with means (and standard deviations) from working-class and middle-class women.

Item	Working-class women (n=104)	Middle-class women (n=100)
1. It sounds worse when a woman swears than when a man does.	0.94 (0.97)	1.75 (0.90)
2. There should be more women leaders in important jobs in public life, such as politics.	2.69 (1.03)	3.01 (0.90)
3. It is all right for men to tell dirty jokes, but I don't think women should tell them.	2.09 (1.09)	2.30 (2.13)
4. It is worse to see a drunken woman than a drunken man.	0.91 (1.13)	1.96 (1.23)
5. If a woman goes out to work her husband should share the housework; such as washing dishes, cleaning and cooking.	3.33 (0.81)	3.56 (0.55)
6. It is an insult to a woman to have to promise to 'love, honour and obey' her husband in the marriage ceremony when he only promises to 'love and honour' her and does not promise to obey her.	2.47 (1.11)	2.91 (1.09)
7. Women should have completely equal opportunities in getting jobs and promotion as men.	3.30 (0.88)	– –
8. A woman should be as free as a man to propose marriage.	2.40 (1.04)	2.75 (0.95)
9. Women should worry less about being equal with men and more about becoming good wives and mothers.	1.66 (1.14)	2.60 (1.06)
10. Girls earning as much as their boy-friends should pay for themselves when going out with them.	2.42 (1.02)	3.00 (0.73)
11. Women should not be bosses in important jobes in business and industry.	2.65 (1.07)	3.49 (0.82)
12. Women should be able to go everywhere a man goes, or do everything a man does, for example, go into pubs alone.	2.73 (1.04)	3.01 (0.99)
13. Daughters in a family should be encouraged to stay on at school and go to college as much as the sons in a family.	3.26 (0.88)	3.67 (0.75)

Table 5.2 continued

14. It would be ridiculous for a woman to
    drive a train or for a man to sew on   2.86   3.50
    shirt buttons.   (1.10)   (0.75)

15. In general, the father should have more
    authority than the mother in bringing   2.51   3.24
    up children.   (1.24)   (0.93)

16. Women should not have sex before
    marriage, even with their fiances.
    (This item is not included in the   2.62   2.05
    AWS-B; see text).   (1.07)   (1.15)

17. A woman's place is in the home looking
    after her family, rather than following   2.51   3.03
    a career of her own.   (1.14)   1.04)

18. Women are better off having their own
    jobs and freedom to do as they please
    rather than being treated like a lady   2.36   2.67
    in the old fashioned way.   (0.88)   (1.00)

19. Women have less to offer than men in   2.57   3.42
    the world of businesss & industry.   (1.06)   (0.84)

20. There are many jobs that men can do   1.28   2.92
    better than women.   (0.94)   (1.19)

21. Girls should have as much opportunity
    to do apprenticeships and learn a   3.32   3.61
    trade as boys.   (0.75)   (0.57)

22. Girls nowadays should be allowed the   1.86   2.93
    same freedom as boys such as being   (1.15)   (0.89)
    allowed to stay out late.

Conclusions

Researchers requiring a measure of attitudes to women which is valid for a general population or for British samples will find the AWS-B useful. Although normative data are not yet available for male groups, the easily understood items were directly derived from the American AWS, which has been validated on both male students and their fathers. There is no reason to believe that the AWS-B would be less robust with male samples. It is felt that the present scale meets a research need, often neglected, for measures suitable for ordinary people from a wide range of educational backgrounds, rather than student samples.

5.4 The measurement of mothers' work attitudes

There is often a research need for attitude and other self-report scales constructed with a particular group of respondents in mind. One group which is growing in size and importance is that of employed mothers with dependent children. The proportion of mothers in employment has increased substantially in recent decades (Central Statistical Office, 1979; Gowler and Legge, 1980), and approximately half of all women with dependent children are now in paid employment (Office of Population Censuses and Surveys, 1979). These women work both as paid organisational members and (in an unpaid capacity) inside the home. However, existing measures of job attitude (e.g. Warr et al., 1979) do not take account of a dual commitment to both child-care and employment roles. Furthermore, coping with demands made by both roles may produce its own

strain (Nye, 1974; Ginsberg, 1976), yet no measure of this is known to us. The objective of this paper is to describe three psychometrically robust scales of mothers' work attitudes, together with evidence of their reliability and validity. We have particularly wished to create short measures, whose items are relevant to and easily understood by a wide range of women, including those from educationally disadvantaged backgrounds. Treating 'attitude' as a broad evaluative orientation, we have operationalised these constructs:

(1) a mother's overall attitude to her present domestic and child-care work.

(2) a mother's overall attitude to her present paid employment.

(3) the strain experienced by an employed mother in coping with both domestic and paid work.

As these scales cover both aspects of the employed mother's work, they may be referred to as the Home and Employment Role scales (HER scales). The separate constructs will be identified as 'home role attitude', 'employment role attitude' and 'interaction strain' respectively.

Method

Scales to measure the three constructs were developed through a question-naire investigation preceded by less formal inquiries. An initial pool of items was drawn from the literature and from unstructured interviews with both employed and unemployed mothers of young children. These items were next tested with a pilot sample of 27 respondents, as a result of which changes were introduced to yield 48 items covering the three constructs. A larger sample responded to these and other items,

and the material which follows is drawn from that investigation.

Sample and procedure

The sample comprised 185 women identified as 'working class' through their own jobs if they were employed or through their husbands' jobs if they had no paid employment. In the former case women were included in the sample only if their husband's job was of similar kind to their own, involving skilled, semi-skilled or unskilled manual work (IIIM, IV or V of the Registrar General's classification system). The sample was drawn in approximately equal numbers from ten widely dispersed sampling areas in the mainland United Kingdom. The women were all of British origin, were living with their husbands, and had children under the age of 14. Thirty-one percent had one child, and 52 per cent and 17 per cent had two and three children respectively. Approximately equal numbers (60, 65 and 60) were in full-time employment outside the home (more than 30 hours a week), part-time employment (up to 30 hours a week) and without paid employment.

Interviews were carried out individually in respondents' homes by trained female staff of National Opinion Polls Ltd. Each interviewer sought volunteers to complete her quota sampling frame, and after an oral introduction to the investigation and the questionnaire she left the respondent to complete the questionnaire herself. The interviewers subsequently called back to receive the completed questionnaire.

The sample achieved through this design is broader and more representative of its target population (working-class mothers with children under 14 and living with their husbands) than is the case in many studies. However, some selection bias cannot be ruled out, since interviewers are likely to have made successful contact with those mothers who had adequate time and energy for the interview. Scores for interaction strain may therefore be lower than in samples drawn from clinical populations or in complete groups of employees completing the questionnaire during paid working time, where self-selection is less probable.

Items and response scales

The 48 items in the initial HER scales appeared on the questionnaire in two blocks, the first 18 dealing with the domestic role and the second 30 covering paid employment (16 items) and problems of interaction between the two roles (14 items). In all cases, the response alternatives against each item were Yes, true, No, untrue, and Don't know. Responses were made by ticking one of these alternatives, and were subsequently scored 3, 1 and 2 respectively.

Demographic information was obtained at the conclusion of the interview, and the following instruments were also employed for cross-validation purposes.

Positive and negative affect. Bradburn's (1969) 10-item measure aims to tap two supposedly uncorrelated types of affect. Positive affect

('feeling good') has been found to be associated with higher levels of social contact and more exposure to new experiences, whereas negative affect ('feeling bad') is uncorrelated with these. The latter (but not the former) has been shown to be correlated with self-reported anxiety, fears of a nervous breakdown and physical symptoms of ill-health (see also Cherlin and Reeder, 1975; Warr, 1978). Positive affect is tapped through five items of the kind: 'During the last few weeks did you ever feel pleased about having accomplished something?' A similar five items assess negative affect, for example: 'During the last few weeks did you ever feel very lonely or remote from other people?' The two types of item were interspersed in presentation, and responses were Yes or No, scored 1 and 0. A high score on the positive affect scale represents a state of well-being, and on the negative affect scale a high score indicates low well-being. In the present investigation the alpha coefficient of internal consistency (Cronbach, 1951; Novick and Lewis, 1967) was found to be 0.72 and 0.63 for positive and negative affect respectively.

Social support. A seven-item measure was included to assess the extent to which a mother was able to draw upon assistance and support in times of difficulty. The response alternatives and scoring were as for the HER scales, and the items were: 'If I have a problem, there is someone I can confide in and talk it over with'; 'If I am ill, there is someone who will stay and look after my children'; 'I see my mother at least once a week'; 'I can discuss everything with my husband freely'; 'I can usually get a babysitter if I want to go out in the evening'; 'I have someone I can turn to if I am very upset about something'; 'If I needed

to borrow £20 quickly, I know someone who would lend it to me without any fuss'. The alpha coefficient of this scale was found to be 0.63.

Life satisfaction. A measure of overall life satisfaction was derived by summing responses to two widely used items: 'Taking all things together how would you say things are these days? Would you say you are: very happy; fairly happy; not too happy?' 'Considering how your life is going would you like to make any big changes? I'd like to carry on much the same as now; I'd like to change part of my life; I'd like to make some big changes'. Responses to both items were scored 2, 1 or 0, and the product moment correlation between the two components was 0.57.

Validation hypotheses

The research design permits examination of several issues bearing upon the validity of the new scales. For convenience these may be set out in terms of the following four hypotheses.

H1   There will be significant differences in interaction strain scores between part-time and full-time employed mothers, reflecting differences in the severity of their role conflicts, but no significant differences will be observed in their employment role attitudes. The latter prediction derives from previous suggestions that particular features of part-time and full-time jobs within a single organisation may yield variations in specific work attitudes (e.g. Logan et al., 1973; Miller and Terborg, 1979), whereas overall

work attitudes across samples of similar employees from many different organisations are unlikely to vary substantially.

H2   Interaction strain will be significantly negatively correlated with social supports, especially for mothers with full-time employment. However, employment role attitude, being concerned entirely with activities and experiences within the work setting itself, will be uncorrelated with social supports.

H3   Home role attitude will be significantly more highly correlated with life satisfaction than will employment role attitude. This prediction is based upon the probability that the domestic role is psychologically primary for mothers with young children (Hoffman, 1974).

H4   Home role attitude will be significantly more highly correlated with negative affect than will employment role attitude, whereas the latter will be significantly more closely associated with positive affect than will the former.

The first of these predictions derives from mothers' deep personal involvement in their family life, such that problems at home of expressive functioning and interpersonal tensions are likely to be reflected in high negative affect. Conversely, Bradburn (1969) views positive affect as a function of social contacts and exposure to new experiences, so that pleasantness of work experiences should co-vary with positive affect. This expectation is supported by Brown and Harris

(1978): 'In the case of employment, not only does the role identity of
worker become available to a woman but her extra social contacts will
often provide her with new interpersonal identities' (p.237).

Results

Decisions about exclusion of items from the three HER scales were based
upon inter-item and item-whole correlations (desired to be high within a
scale), mean item scores (desired to be away from the end-point),
standard deviations (desired to be high), and the meaning of each item
(excessive redundancy within a scale was undesirable). At the same
time, it was desired that the resultant items should tap a wide range of
aspects of home role, employment role and possible sources of
interaction strain. Applying these criteria to results from the full
sample of respondents, the three scales were each reduced to 12 items,
which are presented in full in Table 5.3. Between five and seven items in
each scale are reverse scored. Coefficients alpha were 0.71, 0.78 and
0.75 for the home role attitude, employment role attitude, and
interaction strain scales respectively. For each scale the possible
scores range between 12 and 36, with a mid-point of 24.

Means and standard deviations for the full sample of respondents and for
the three subsamples are shown in Table 5.3. The interaction strain
scores are relatively low, perhaps reflecting the sampling procedures
(see above), and the social supports values are similarly relatively
high. Responses to the home role attitude and employment role attitude
items are distributed around means closer to the mid-point of the scale,

Table 5.3 Means, standard deviations and intercorrelations (decimals omitted) between the seven measures for three subsamples and the full sample[a].

		HRA	ERA	IS	PA	NA	SS	Mean	SD
Home role attitude (HRA)	NPE							27.86	5.35
	PTE							26.02	5.51
	FTE							26.27	5.44
	All							26.69	5.46
Employment role attitude (ERA)	NPE							29.19	5.37
	PTE	25						29.06	5.34
	FTE	34						29.13	5.32
	All	29							
Interaction strain (IS)	NPE								
	PTE	-43	-32					13.90	3.43
	FTE	-47	-45					16.31	5.17
	All	-38	-38					15.07	4.51
Positive affect (PA)	NPE	42						2.95	1.71
	PTE	37	50	-51				3.01	1.67
	FTE	27	57	-32				3.03	1.68
	All	35	53	-38				3.00	1.68
Negative affect (NA)	NPE	-34			-32			2.00	1.59
	PTE	-49	-25	51	-53			1.98	1.54
	FTE	-51	-20	29	-28			1.91	1.52
	All	-45	-23	36	-38			1.97	1.54
Social supports (SS)	NPE	45			45	-29		17.65	4.11
	PTE	26	17	-22	27	-36		18.79	2.58
	FTE	33	09	-36	15	-14		18.78	2.41
	All	31	13	-28	31	-27		18.41	3.07
Life satisfaction (LS)	NPE	43			32	-61	40	2.64	1.17
	PTE	53	33	-45	41	-55	31	2.65	1.12
	FTE	50	32	-28	35	-38	24	2.82	1.05
	All	48	32	-29	36	-52	32	2.69	1.11

[a]Respondent samples are identified as follows: NPE - no paid employment (n=60); PTE - part-time employment (n=65); FTE - full-time employment (n=60); All - the full sample (n=185).
Note. Correlation coefficients are statistically significant (P 0.01, two-tailed test) for NPE and FTE at 0.33, for PTE at 0.32, and at 0.20 for the full sample. However, the full sample for ERA and IS scales numbers only 125, when the critical value of r is 0.23.

Table 5.4

Home Role Attitude (HRA)

Here are some statements about being a wife and mother. Please read each one carefully and tick one box for each statement.

1. My family really shows that they appreciate all I do for them. (+)
2. I get a lot of help from my husband with routine tasks in the home. (+)
3. Being a mother leaves me enough time to spend on myself. (+)
4. I would like more adult conversation and company than I get at home with the children. (—)
5. One of the good things about being a housewife is that I can plan my own day in the way I want. (+)
6. I feel my family takes me too much for granted. (—)
7. On the whole I have enough free time to do the things I want to do. (+)
8. Life at home is too much the same routine day after day. (—)
9. I wish my children showed their love for me more. (—)
10. My family lives in accommodation that is too small. (—)
11. One of the bad things about being a mother is that I often have to put my family first and go without things myself. (—)
12. I sometimes get in a panic about the problems of running a home. (—)

Employment Role Attitude (ERA)

Here are some statements to do with having a job outside the home. If you do not have paid employment, please miss out this section.

1. People where I work are very friendly. (+)
2. My job is very boring. (—)
3. I get the feeling of achieving something worthwhile in my job. (+)
4. I only do my job because I need the money. (—)
5. My boss is always ready to discuss people's problems. (+)
6. My boss takes the work I do too much for granted. (—)
7. I wish I had more security in my job. (—)
8. There is a happy atmosphere in the place where I work. (+)
9. I really dislike my job. (—)
10. My boss is fair to everyone. (+)
11. Where I work, management asks workers first about changing anything that affects them. (+)
12. I am unhappy with my working conditions. (—)

Interaction Strain (IS)

1. The hours I work make it very difficult to look after the children. (+)
2. My job leaves me enough time to spend with my family and friends. (—)
3. My husband listens to me if I want to talk about what's b en happening at work. (—)
4. I feel guilty about leaving my children when I go out to work. (+)
5. When I am at work, I often worry about things to do with my home or children. (+)
6. I get so involved with my job that I feel a conflict of loyalty between my home and work responsibilities. (+)
7. I find it hard to get my children looked after when I am at work. (+)
8. My job gives me a welcome break from housework and children. (—)
9. My husband thinks it's a good idea for me to go out to work. (—)
10. My working hours fit in well with those of my husband, and this makes it easier to arrange for the children to be looked after. (—)
11. Going to work makes me too tired to enjoy family life properly. (+)
12. The amount of travel needed to go to work interferes with family life. (+)

and the affect scores are comparable to those reported by Bradburn
(1969) with female respondents.

Table 5.3 also contains all intercorrelations between the measures. It
can be seen that the three HER scales are moderately associated with each
other (rs of 0.29, -0.38 and -0.38 for the full sample), but it is
necessary to examine these relationships after partialling out life
satisfaction scores, treating these as an index of general optimism
which might inflate the intercorrelation between the three HER scales.
Partial correlations of this kind are 0.16, -0.28 and -0.32 between home
role and employment role, home role and interaction strain, and
employment role and interaction strain respectively. Interaction strain
remains significantly associated with each of the other variables, as
expected from its definition, whereas home role and employment role
attitudes are in this analysis not significantly intercorrelated.

It can also be seen from Table 5.3 that positive and negative affect
values are significantly intercorrelated (r=-0.38 for the full sample).
This high value is not to be expected from Bradburn's (1969) theorising
and scale construction, and exceeds the value of -0.21 recently observed
in a sample predominantly male employees (Warr, 1978).

Validation hypotheses

Evidence bearing upon the four hypotheses was obtained as follows.

H1   The mean employment role attitudes of part-time and full-time
     employed mothers were almost identical (see Table 5.3), whereas
     full-time employees exhibited significantly greater interaction
     strain than part-time employees (t=2.98; p<0.01). Hypothesis 1 is
     thus supported.

H2   The second hypothesis was also supported: correlations between
     interaction strain and social supports were -0.22 for part-time
     employed mothers, -0.36 (p<0.01) for full-time employed mothers, and
     -0.28 (p<0.01) for all employed respondents. On the other hand,
     employment role attitude was not significantly correlated with
     social supports for any of the subsamples (see Table 5.3).

H3   Correlations with life satisfaction were consistently larger for home
     role attitude than for employment role attitude (for example, 0.48
     and 0.32 for the full sample; see Table 5.3), but these differences
     did not reach statistical significance.

H4   The predicted cross-over pattern emerged in the relations between
     positive and negative affect and the two role attitude measures.
     Positive affect was more closely associated with employment role
     attitude than with home role attitude, the difference being
     significant for the full-time employed subsample (Hotelling's
     t=2.41; p<0.05, two-tailed test) and the full sample (Hotelling's
     t=2.13; p<0.05, two-tailed test). Conversely, negative affect was
     significantly more strongly associated with home role attitude than

with employment role attitude ($p < 0.05$, two-tailed test, in each case).

Discussion

The three new scales described here have proved to be acceptable to working-class mothers with young children and their psychometric properties are good. They have high internal consistency, appear to tap different constructs, are intercorrelated as required by their definition, and are associated with other measures as expected. For example, full-time employed mothers report significantly more interaction strain than do part-time employed mothers, but no differences are observed in employment role attitude. Associations between employment role and home role attitudes and positive and negative affect were patterned in an interesting manner as predicted from Bradburn's (1969) examination of well-being.

The absence of differences between the three groups of respondents on the measures of positive and negative affect and life satisfaction deserves comment. An earlier study (Warr, 1978) recorded differences in affect between employed and unemployed men but found these to depend upon respondents' work involvement. Put simply, out-of-work men who want to be in work have particularly poor psychological well-being, but this is less the case for those who are unemployed and unconcerned about that fact. A high proportion of mothers in the present study who are unemployed or in paid employment are in that category by choice, so that

no overall differences in well-being are to be expected. A similar study which included the measurement of work involvement would permit more complex comparisons along thelines of those reported by Warr (1978).

The HER scales have been designed for a specific group, mothers with young children, and initial normative data are presented here (see Table 5.4). Studies of mothers and work tend to rely upon qualitative evidence of subjective state (e.g. Oakley, 1974) or to use unvalidated measures with unknown psychometric qualities. The application of scales with established properties is to be encouraged, and these three measures may be widely appropriate.

CHAPTER SIX: PAID EMPLOYMENT, LIFE EVENTS, SOCIAL SUPPORT AND
MENTAL HEALTH IN WORKING CLASS MOTHERS

6.1 Introduction

Epidemiological findings suggest that working class mothers with dependent children are at high risk for mental health problems. Women in general are found to be twice as likely to be suffering depression than men (Amenson and Lewinsohn, 1981; Roberts and O'Keefe, 1981; Weissman and Klerman 1977). There is some evidence that the sex difference is greatest among the married (Bebbington et al., 1981; Cleary and Mechanic, 1983) and particularly among parents (Aneshensel et al., 1981). Many surveys have found higher rates of affective disorder in groups of lower social status (Cochrane and Stopes-Roe 1980; Dohrenwend and Dohrenwend 1979; Srole et al., 1961). Working class women with young children are more vulnerable to mental health problems than their husbands, similar women without children or than their middle class counterparts (Brown and Harris, 1978; Warren and McEachren 1983).

Researchers have identified a number of factors which are likely to influence the mental health of mothers in low income families. The study to be reported was designed to examine the relationship of paid employment, life events, social support and pre-school children to a range of mental health, psychological distress and self-esteem measures in a sample of working class mothers. In particular, the study was

designed to clarify the effect of paid employment, as there have been
conflicting reports.

Unemployment is generally associated with depression in men and single
women (Dooley and Catalano, 1980; Warr, 1982; Warr and Parry, 1982a).
The term 'unemployed' is technically confined to those who would prefer
to be in the labor force, but many married women with young children do
not register themselves as unemployed and many are not seeking paid
employment. ('Nonemployed' will be used here as a more general term).
Studies of the effect of paid employment on women's mental health are
therefore often not directly comparable with other unemployment
research. However, it is striking that most studies of married women
(including data from the US, UK and Australia) do not find any
statistically significant differences between homemakers and employed
women on a wide range of mental health indices and life satisfaction
measures (Amenson and Lewinsohn, 1981; Campbell, Converse and Rogers,
1976; Cartwright and Jefferys, 1958; Cochrane and Stopes-Roe, 1980;
Feld, 1963; Finlay-Jones and Burvill, 1979; Hare and Shaw, 1965,
Newberry, 1979; Radloff 1975, Roberts and O'Keefe, 1981; Rosenfield,
1980). Similarly, studies which specifically report data on mothers
are almost unanimous in finding no significant differences between
employed and nonemployed groups (Aneshensel et al., 1981; Gove and
Geerken, 1977; McGee et al., 1983; Moss and Plewis, 1977; Radloff,
1980; Sharp and Nye, 1963; Shehan, 1984; Stewart and Salt, 1981; Walker
and Walker, 1980; Welsh and Booth, 1977).

Some studies of married women or mothers have reported a beneficial effect of paid employment however. Kessler and McRae (1982) found that employed married women had lower scores on measures of anxiety, depression and low self esteem than the nonemployed. However, this finding was specific to those reporting high job satisfaction and was much weaker for mothers with dependent children. Briscoe (1982) found higher levels of self reported symptoms and negative feelings among homemakers compared to employed married women, but as the nonemployed group contained a greater proportion of mothers with young children, this effect may not be due to employment itself. Results from Welsh and Booth (1977), Bebbington et al (1981), Cochrane and Stopes-Roe (1981) and Warr and Parry (1982a) suggest that although differences in mental health between employed and nonemployed mothers are rarely found, they may be more common in working class groups. The effects of employment outside the home may be moderated by social factors which are more common in the working class group. It is important to establish whether there are subgroups of working class women for whom employment is beneficial, or even, in some cases, a further source of stress through role overload. Life stress, social support deficits and financial difficulties may be important here.

The role of stressful life events, particularly severe loss events, in contributing to the onset of depression has been established by a number of independent studies (Brown and Harris, 1978; Dohrenwend and Dohrenwend, 1974; Paykel et al., 1969; Myers et al., 1972; Tennant and Andrews, 1978). Similarly, the importance of having available a network of socially supportive relationships has been stressed by a

number of authors (Caplan, 1974; Cassel, 1976; Cobb, 1976). There is controversy about whether such support has a direct, independent effect on psychological wellbeing in routine living, or whether its effects only became apparent in response to the demands of a stressful life event (Aneshenel and Stone, 1982; Cohen and Wills, 1985; Parry and Shapiro, 1986).

This evidence suggests that working class mothers who have experienced a severe life event and who lack social support will be at higher risk of becoming depressed. However, there are few studies which examine paid employment together with these psychosocial stressors, although of course in the lives of the women concerned these factors operate conjointly. The present study was designed to do this, in line with Warr and Parry's (1982a) conceptual framework, by comparing the mental health of employed and nonemployed mothers at differing levels of psychosocial stress. For example, paid employment may buffer the effects of a stressful life event by providing financial or social resources which would otherwise be unavailable. Because employment outside the home is likely to have differential effects for mothers in different social circumstances, the analysis of interactions between paid employment and other social factors is emphasized.

Measures of life event stress range from checklists or inventories of events to interview procedures of varying complexity (Dohrenwend and Dohrenwend, 1974; Rabkin and Struening, 1976). We used an interview rather than a checklist measure of life events to increase reliability and reduce contamination by means of Brown and Harris's (1978)

'contextual' rating of event threat, taking account of the circumstances of the event while remaining independent of the respondent's psychological reaction to it. The reliability of this procedure is well established (Parry et al., 1981; Tennant et al., 1979). We compare those mothers who have, in the past 12 months, experienced a severely stressful life event (such as bereavement, divorce, sudden loss of income) with those who did not experience a severe event. In other analyses we use a continuously distributed measure of the total amount of life event stress suffered in the previous year.

Social support is conceptually diffuse, and a number of writers have urged researchers to take more care over definition and measurement (Dean and Lin, 1977; Thoits, 1982). It has been recommended that a distinction be drawn between instrumental and expressive aspects of support as the role of available practical help may differ from that of intimate and confiding relationships (Thoits, 1982). There have also been widespread difficulties in measuring perceived social support independently from depressed mood (Dohrenwend et al., 1984). Many indices of social support are little more than life satisfaction ratings, and as a result the level of association may have been inflated in some reported studies. The present study used separate measures of instrumental and expressive support. The latter measure (often most at risk of overlap with the depression variable) was developed to be relatively independent of the mother's perception about how supported she feels and focuses more on the objective availability of close ties and the degree of contact with them.

A number of authors have suggested that mothers who care for one or more pre-school children are more likely to become depressed than those with older children (Hobbs, 1965; Moss and Plewis, 1977; Richman, 1976). However, a direct effect of pre-schoolers has not been universally found (D'Arcy and Siddique, 1984). The present study addresses this issue by examining the differences in mental health of women with and without pre-school children and by testing whether paid employment effects are altered by the presence of a pre-school child.

In a number of studies of women with pre-school children, women with very young infants are included (D'Arcy and Siddique, 1984; Richman, 1976). It is thought that the puerperium holds special mental health risks for mothers, (Kendell et al., 1976) and the care of a young infant is qualitatively different from the care of older children. For these reasons the present study excludes mothers who have a child under 18 months of age in order to focus more precisely on the preschool vs school age distinction rather than the effects of a recent birth.

Not all mothers are married, and results from some studies indicate that unmarried mothers of young children are at the highest risk for depression (Colletta, 1983; McGee et al, 1983). This may reflect the economic strain and social support deficits typically suffered by single parents (Pearlin and Johnson, 1977). The present study did not exclude single parents from the sample, but first tested for an association with the mental health variables before including them in further analysis.

Papers in this field have tended to use simple distinctions between homemakers and employed mothers often without specifying whether full or part time employment is involved (Warr and Parry, 1982a). Mothers with dependent children are much more likely to be in part-time employment than are single wage-earners, and there is evidence that this is the most common form of employment in this group (Rimmer and Popay, 1982). In addition, 'part-time' employment could vary between two or three hours to 30 hours per week. With rare exceptions (Welsh and Booth, 1977), respondents who have recently changed their employment status are typically included, so that mothers who have stopped working outside the home only weeks before would be designated 'unemployed' and those who very recently entered a job would be 'employed'. These definitional confusions point to the need for more precise specification of the employment status variable. The present study compared those mothers in stable part-time employment (defined as between 10 and 30 hours per week) with nonemployed mothers, excluding those who have changed their employment status within three months prior to interview.

The present study takes an unusual approach to sampling. Investigators in this field have usually taken representative samples from the population of a city, region or country. Such an approach, while essential to establish prevalence rates, has limitations in respect of detailed model testing. The major problem is that where there is a high level of association between independent variables in the model, respondents with certain rare but theoretically crucial combinations of characteristics may not be sampled. For example, if employment is

generally associated with higher levels of social support, employed women with poor support may be relatively infrequently sampled, making multivariate model testing difficult. There is the danger that paid employment, when confounded with other variables, may become indirect measures of them. While this problem can never be completely overcome, the present study aims to complement those using representative samples by screening a defined population of mothers in order to meet target numbers for each cell in the design.

Many studies have used questionnaire and checklist measures of depression and anxiety, yielding continuously distributed indices of psychological distress. Some of these, such as the General Health Questionnaire (Goldberg, 1972) and the Center for Epidemiological Studies Depression Scale (Weissman et al., 1977) have been validated against psychiatric diagnosis. Other studies have used standardized psychiatric interview schedules, such as the Present State Examination (Wing et al., 1974) which can yield a psychiatric case definition or can be used as an overall index of psychiatric symptomatology (Bebbington et al., 1981). There is a danger that if different approaches are sensitive to different facets of psychological distress, at least some contradictory findings in this field may be due to measurement differences between checklist and psychiatric interview methods (Parry and Shapiro, 1986). For this reason, the present study used the Present State Examination and a reliable case identification procedure, but also several continuously distributed measures of psychological distress and wellbeing, including anxiety, depression, self esteem and positive affect.

6.2 Method

Sampling procedure

To achieve the required sample, it was necessary to screen a larger population in several stages. Birth records held at six child welfare clinics located in working class areas throughout the city of Sheffield were made available to the investigators. These statutory records list all children born to mothers living in the catchment area. Names and addresses of 812 women who had given birth to a child between four and seven years previously were obtained. A letter to the woman was followed by visits to her home until contact was made. If no response was obtained after three visits at different times of day, the woman was designated 'uncontacted'. In all, 102 women were not contacted for either this reason or inaccurate address information. Of the remaining 710 women, 181 had moved away from the area. Twelve women who had moved were replaced with comparable women at the same address, although despite this the sample is somewhat biased towards residential stability.

To ensure that the sample was relatively homogeneous with respect to life stage (and consequent employment commitment) all women had at least one child between four and seven years of age and were under 45 years old. For the same reason, and more specifically to exclude post-natal depressions from the study, no woman in the sample had a child under 18 months old. As there were too few to study system-atically, full time employed mothers were also excluded from the

sample, as were women from ethnic minority groups. 241 women were ineligible for the study because they did not meet the following screening criteria: middle class (143), baby under 18 months (45), ethnic group member (27), full time employment (17), over 45 years of age (9).

As women were screened, they were assigned to one of sixteen cells in the study design (2 x 2 x 2 x 2: with and without part time employment, severe life event in previous 12 months, above average instrumental social support, preschool child). The target n for each cell was 12, and as each one became full, women with that combination of character- istics were no longer interviewed. A total of 57 women were not interviewed for this reason. Of the 243 women who were invited to participate in the research, 50 (20.6%) were not interviewed, either through refusal or by failing to completing the interview procedure.

Sample characteristics

193 working class women with young children living in Sheffield, UK, were interviewed. Socio-economic status was assessed using the Registrar General's Classification, in respect of a woman's own job (where employed) or her husband's present or most recent job, whichever was the higher. On this criterion, only families in skilled, semi-skilled and unskilled manual occupational groups (IIIM, IV and V) were selected for interview.

In the final sample, there were the following numbers of women at each level of the four socio-demographic variables under investigation: a) part-time paid employment (93), nonemployed (100); b) pre-school child (94), school age children only (99); c high instrumental social support (87), low instrumental support (106), d) severely threatening life event in the previous year (74), no such life event (119). Although it was not possible to meet all cell targets, 11 of the 16 cells contained between 9 and 16 women. Mothers with a severe life stress yet above average instrumental support were relatively difficult to locate, especially with paid employment and pre-school children.

Measures

Life event threat. The London Life Events and Difficulties Schedule was used (LEDS; Brown and Harris, 1978). The previous twelve months' life events were elicited using this structured interview, a brief account of each event written out (from the audiotape of the interview) and later rated on 'long term threat' by three independent raters who had available the LEDS dictionary of events used to provide anchor points for each level of rating. The degree of threat is judged from the perspective at the end of the first week following the occurrence of the event and according to the context in which the event occurred but independently of the woman's affective reaction or mental state. Threat is rated on a four point scale, a score of 1 representing marked threat; 2, moderate threat; 3, some threat; 3, little or no threat. Inter-rater reliability was good, with overall agreement of .81 using

Kendall's coefficient of concordance (Parry et al., 1981). Each event
is also rated for its focus, whether on the subject herself or on
another person, and the reliability of these ratings were also
satisfactory at .78 using weighted Kappa. After making independent
ratings, the raters met to reach a consensus on events where there was
disagreement. Following Brown and Harris (1978:309), a woman was
assigned to the 'severe life event' category if she had suffered an
event given the rating of marked long term threat (any focus), or
moderate long term threat when the event was focussed on the subject
herself.

In addition to this categorisation a continuously distributed variable
was derived from the long term threat scores for the previous twelve
months' events. This was done by reversing the threat scale, so that an
event at the highest level of threat scored 4, and at the lowest 1.
These scores were summed, giving an index of life event stress for the
preceding year which is a function of the number of events and their
severity.

Chronic social difficulties were also measured using this schedule. In
the present analysis, the presence of financial and housing
difficulties and difficulties with children were measured and used as
covariates in analyses of variance, irrespective of severity.

Instrumental social support (ISS) was measured during interview by
asking about available practical help and membership of community
groups. This was distinguished from expressive social support which

concerns the availability and use of close confiding relationships
(see below). The availability of two levels of financial help in a
crisis, and of help with child care, both routinely and in a crisis,
was assessed by four items each scored 'yes' (two points), 'no' (zero
points) and 'not certain' (one point). Contact with local medical
resources, membership of religious groups and membership of other
community associations (such as mother-and-toddler groups or social
clubs) were assessed by specific questions assigned a possible maximum
of five points for each domain. In order to implement the screening
procedure, after the first 50 women were interviewed, their summed
scores were calculated, and those above and below the median were
designated 'high' and 'low' ISS respectively. Instrumental support
can therefore be analysed both in terms of a continuous distribution
and as a binary variable.

Expressive social support (ESS). Women were, after interviewing was
complete, assigned to a 'high', 'medium' or 'low' expressive support
category on the basis of (a) the total number of social contacts, (b)
the proportion of time spent during the last seven days before
interview with confidants, (c) the number of confidants, and (d)
whether there was evidence (on the LEDS) of marital disharmony other
than self-reported dissatisfaction. It was decided that ratings of
expressive support were best made by within-sample comparison rather
than by reference to external norms. For this reason, the criteria were
derived from consensual rating of 15 protocols taken at random, and
were thus adjusted to yield a normal distribution within this
particular sample. These were as follows:

High ESS: 1) At least two confidants split between husband, family and non-family, 2) no evidence of marital disruption, 3) more than twelve people on the social contacts list and 4) contact with confidants in the previous seven days. All four criteria were met by mothers in the high support category.

Low ESS: 1) No or only one confidant, 2) fewer than five people on the social contacts list and 3) evidence of social isolation on the seven day time log. All three criteria were met by mothers in the low support category.

Medium ESS: All other respondents were rated 'medium'.

The final distribution of respondents in the high:medium:low categories was 49:98:41 respectively. Three raters independently assessed protocols; inter-rater reliability using Kendall's coefficient of concordance was .81 between pairs and .75 overall. Disagreements were resolved by adopting the rating two out of three raters had agreed.

Psychiatric morbidity was assessed using the standardized case identification procedure described by Wing, Cooper and Sartorius (1974). The 9th edition of the Present State Examination (PSE) was designed for use as a screening measure in general populations and establishes through interview the degree to which each symptom is present (Wing, 1980). Cases were identified by using the PSE profiles and the CATEGO-ID system (Wing and Sturt, 1978). Each respondent was assigned to one of eight levels of increasing severity of psychiatric disorder, known as Index of Definition (ID) levels (Wing et al., 1978). The threshold at which a person is identified as a 'case' is typically

ID level 5, and at this level and above a provisional diagnosis can also be made. 20% of the present sample were 'cases' at ID5 or above; 16% at the threshold level ID 5 and 4% were 'definite cases' (level 6 or above). By far the most common diagnosis was neurotic depression (65%) with anxiety disorder the next most common (22%).

Psychological distress was measured using a range of questionnaire methods. The Beck Depression Inventory (Beck et al., 1961) is a widely-used 21 item measure of the behavioural manifestations of depression, irrespective of clinical diagnosis. A short form of the Zung Self-rating Depression Scale (Zung, 1965) was derived which consisted of six items from this measure with high item-whole correlations in a previous study with a comparable sample (Warr and Parry, 1982). These authors' short form taps affective and psychological disturbance rather than physiological and psychomotor items, and was found to be valid and reliable. The somatic anxiety scale of the Multi-component Anxiety Scale (Schalling, 1975) gave a brief measure of anxiety-related physiological arousal and to provide, with the short Zung scale, indices which would discriminate between depression and anxiety. Bradburn's five item measure of negative affect (Bradburn, 1969) assessed recent levels of unpleasant feelings without reference to psychiatric assumptions. The total number of symptoms found using the PSE were summed to give a continuously distributed measure of psychiatric distress in addition to the case criterion described above. A measure of positive affect (Bradburn, 1969) was used to tap psychological well-being directly. Rosenberg's measure of self-esteem was also included (Rosenberg, 1965). There is

considerable evidence that this scale reflects two independent aspects of self esteem tapped by the positively and the negatively worded items respectively (Zeller and Carmines, 1980; Warr and Jackson, 1985). Because of this, positive and negative Rosenberg items were summed and analysed separately to give positive self esteem and self depreciation scales.

Analyses

Product moment correlations were used to assess the association between psychosocial and mental health variables. The 2x2x2x2 research design lends itself to analysis of variance, and the regression model form of the ANOVA subprogram of SPSS (Nie et al., 1975) was applied. These analyses were conducted for each of the mental health variables, namely PSE total, Beck, Zung, somatic anxiety, positive affect, positive self esteem and negative self esteem. The nature of these measures led inevitably to a skewed distribution of subjects' scores, this departure from normality being particularly marked for the PSE total and the Beck Depression Inventory. Analyses were therefore performed using a log and square root transformation of these two scales. The transformation gave a more random distribution of errors, but only trivial differences in the results obtained. For the sake of clarity, the results of the untransformed scales are therefore presented. Where the dependent variable was dichotomous (the case/not case criterion) the resultant contingency table was analysed using logistic regression. The General Linear Interactive Modelling (GLIM) program was used specifying a

logistic link funtion with binomial errors (Nelder, 1975).

6.3 Results

Socio-demographic variables and psychological distress

Because the sample included both married and single mothers, it was important to examine the relationship between psychological distress and marital status. Table 6.1 shows the full range of clinical, well being and self esteem variables with scores broken down by marital status. In this analysis, the 'married' group included women cohabiting with their partners whether legally married or not. The relatively small group (n=21) of single mothers included the never-married, separated, divorced and widowed, not living with a partner (although some were living with their families of origin). It was found that the single women did not differ from their married counterparts on the measures of psychiatric symptomatology or psychological distress, although they did have significantly higher scores on negative affect and a nonsignificant tendency to score more highly on self-depreciation. Because there were no significant differences between the two groups on the clinical variables and because the single mothers were distributed evenly across the 16 cells of the design, they were included in subsequent analyses. The continuously distributed summed life event stress score was significantly but modestly associated with the mental health variables. Product moment correlations ranged from .17 to .28 (see Table 6.2). The exception to this was positive affect and self esteem

Table 6.1: **Single (n=21) and married (n=172) mothers: Comparison between groups on measures of psychiatric symptomatology, psychological distress and self esteem.**

		PSE	Beck	Anxiety	Zung	Positive affect	Negative affect	Pos self esteem	Neg self esteem
Single	mean	6.76	9.95	3.50	5.67	2.62	3.05	8.14	5.86
	(s.d.)	(7.06)	(9.72)	(2.39)	(4.10)	(1.66)	(1.66)	(1.96)	(3.39)
Married	mean	5.32	7.81	2.63	4.84	2.65	2.23	8.19	7.02
	(s.d.)	(6.27)	(7.12)	(2.48)	(3.78)	(1.76)	(1.55)	(1.93)	(2.76)
t-value[1]		—	1.25	1.48	—	—	2.26	—	1.77
significance[2]		ns	ns	ns	ns	ns	.02[3]	ns	.08[4]

Notes

1   191 degrees of freedom: values less than 1 not shown.

2   Two tailed tests

3   Single mothers have higher negative affect scores

4   Single mothers have lower self esteem scores, ie. higher self-depreciation

Table 6.2: **Product moment correlations between psychosocial and mental health variables.**

	PSE	Beck	Zung	Anxiety	Positive affect	Negative affect	Neg self esteem	Pos self esteem
Life event stress	.29*	.17+	.21+	.19+	-.02	.28*	-.15	-.01
Instrumental support	-.23+	-.24+	-.25*	-.21+	.23+	-.23*	.21+	.15
Expressive support	-.25*	-.30*	-.42*	-.28*	.25*	-.37*	.36*	.20+
Financial difficulty	.21+	.24*	.15	.07	-.22+	.12	-.22+	-.04
Housing difficulty	.04	.16	.09	.11	.03	.07	-.08	.01
Childcare difficulty	.17+	.22+	.14	.19+	-.01	.21+	-.32*	.01

+ $p < .01$

* $p < .001$

which were not related to life stress. Women who had experienced one or more severely threatening life events were significantly more likely to be at or above the psychiatric case threshold (33.33% cases) than those who had not (12.5%) [chi^2=10.25, p<.01].

Both instrumental and expressive social support were consistently and significantly correlated with distress and well-being variables (Table 2). Women who lacked instrumental support had significantly higher levels of psychological distress and self depreciation than their socially supported counterparts. The unsupported women also had lower levels of positive affect, but the two groups did not differ significantly in positive self esteem. In addition, there was a significantly higher proportion of psychiatric cases in the low instrumental support group compared to the high support group [26% and 13% respectively, chi^2=4.80, p<.03].

It was found that the level of expressive social support was significantly associated with all the distress and well-being measures, including self depreciation and positive self esteem. The proportion of psychiatric cases in the low, medium and high expressive support groups was 41%, 16% and 12% respectively, showing significantly more cases in the poorly supported group [chi^2=14.87, 2df, p<.001].

Difficulties with finance, housing and childcare were examined in relation to mental health variables (see Table 6.2). Taking a 1% level of probability as significant, financial difficulties were found to be associated with psychiatric symptomatology, Beck Depression scores and

self depreciation but inversely related to positive affect. Childcare difficulties were modestly associated with psychiatric symptomatology, Beck depression scores, somatic anxiety and negative affect, and more strongly associated with self depreciation. Housing difficulties were not significantly related to any mental health variable.

Prior to analysis of employment effects, 15 women were excluded because they had changed their employment status within the previous three months and a further seven because they were employed fewer than 10 hours per week.

Employment status was found to have no overall effect on the symptom, distress or well-being measures in this sample, nor was the absence of paid employment a significant factor in whether or not a mother was above the threshold on the psychiatric case criterion. However, the nonemployed mothers differed from the employed mothers on the negatively worded items of Rosenberg's self esteem scale [$F(1,155)=4.43$, $p<.05$]; that is they showed higher levels of self-depreciation than those mothers in stable employment.

It was found that the care of a pre-school child did not have any consistent association with mental health measures. The strongest relationship, not in the predicted direction, was with psychiatric symptomatology [$F(1,171) = 1.47$, n.s.]. No significant interaction term was obtained between employment status and caring for a preschool child for any of the indices of mental health.

Paid employment effects in groups at high psychosocial risk
<u></u>

In order to go beyond a global comparison between all employed and all nonemployed mothers, the mental health scores of the two groups of women were compared at different levels of the life event stress variable using a moving average technique (Tukey, 1977). This exploratory technique reveals trends in the data which can later be tested using confirmatory (significance-testing) techniques. A 'window' of 40 subjects was moved across the distribution, forming 11 blocks of subjects. Each successive block overlapped by 20 subjects. This procedure was carried out using the total number of PSE symptoms and the Beck Depression Inventory as the dependent variables (see Figures 6.1 and 6.2).

It can be seen that symptoms only became linearly and positively related to life event stress at higher levels of the stress variable. This suggests a threshold model, where below a certain level of stress there are no implications for psychiatric symptomatology. When the trends for each employment group were examined separately, the employed mothers appeared to have a higher threshold of life event stress before the symptom score responded. This suggests that differences between employed and nonemployed mothers would only be found at higher levels of life event stress, that is among those who were already at higher risk of psychiatric symptomatology.

To confirm these results, three way analyses of variance were carried out including life stress level, social support level and employment

FIGURE 6.1

Moving average graph, mean PSE symptom scores for overlapping blocks of respondents at increasing levels of life event stress: Employed (broken line) and unemployed (solid line) mothers.

life event stress block no.
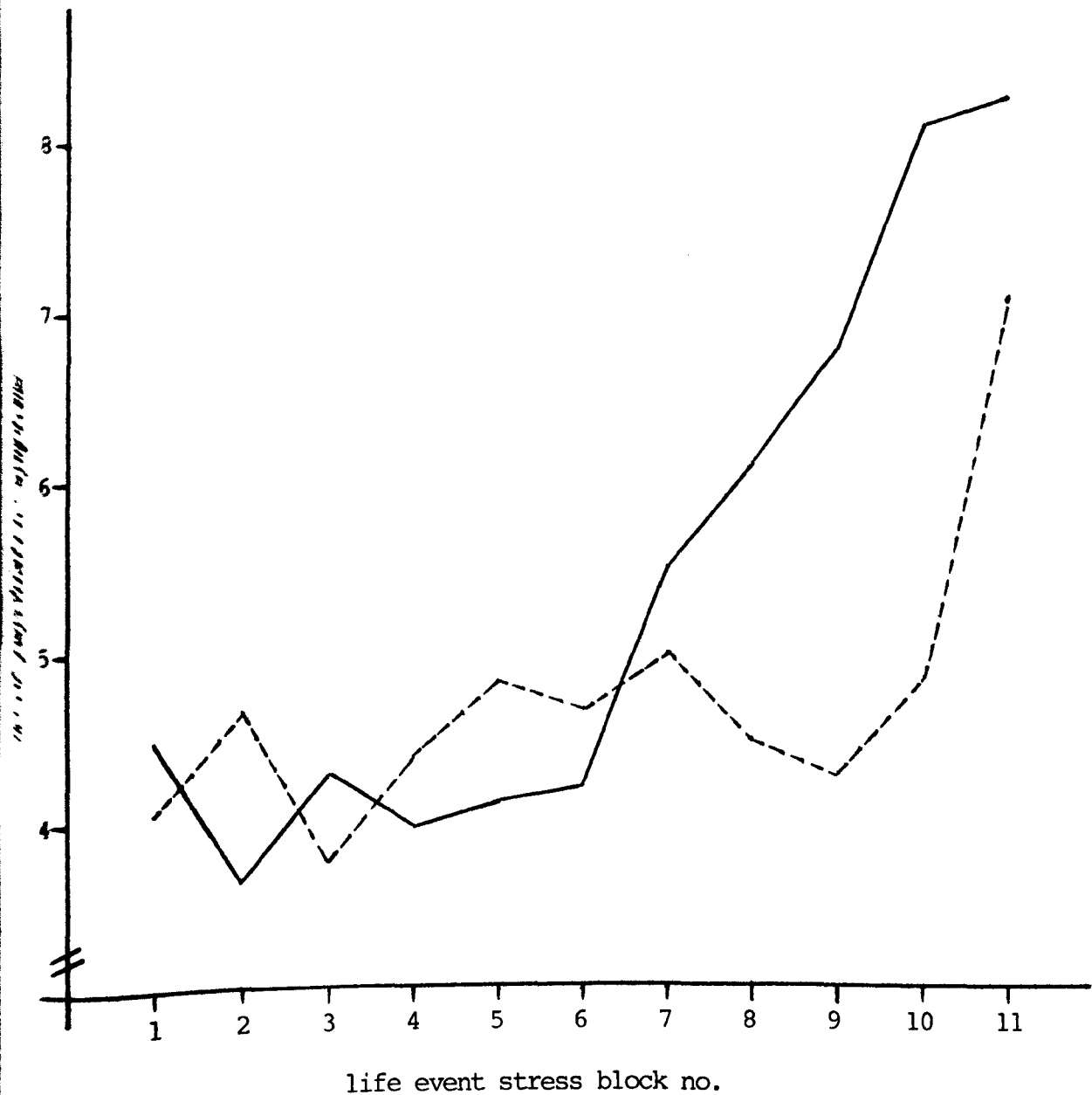
FIGURE 6.2

Moving average graph, mean BDI depression scores for overlapping blocks of respondents at increasing levels of life event stress: Employed (broken line) and unemployed (solid line) mothers.
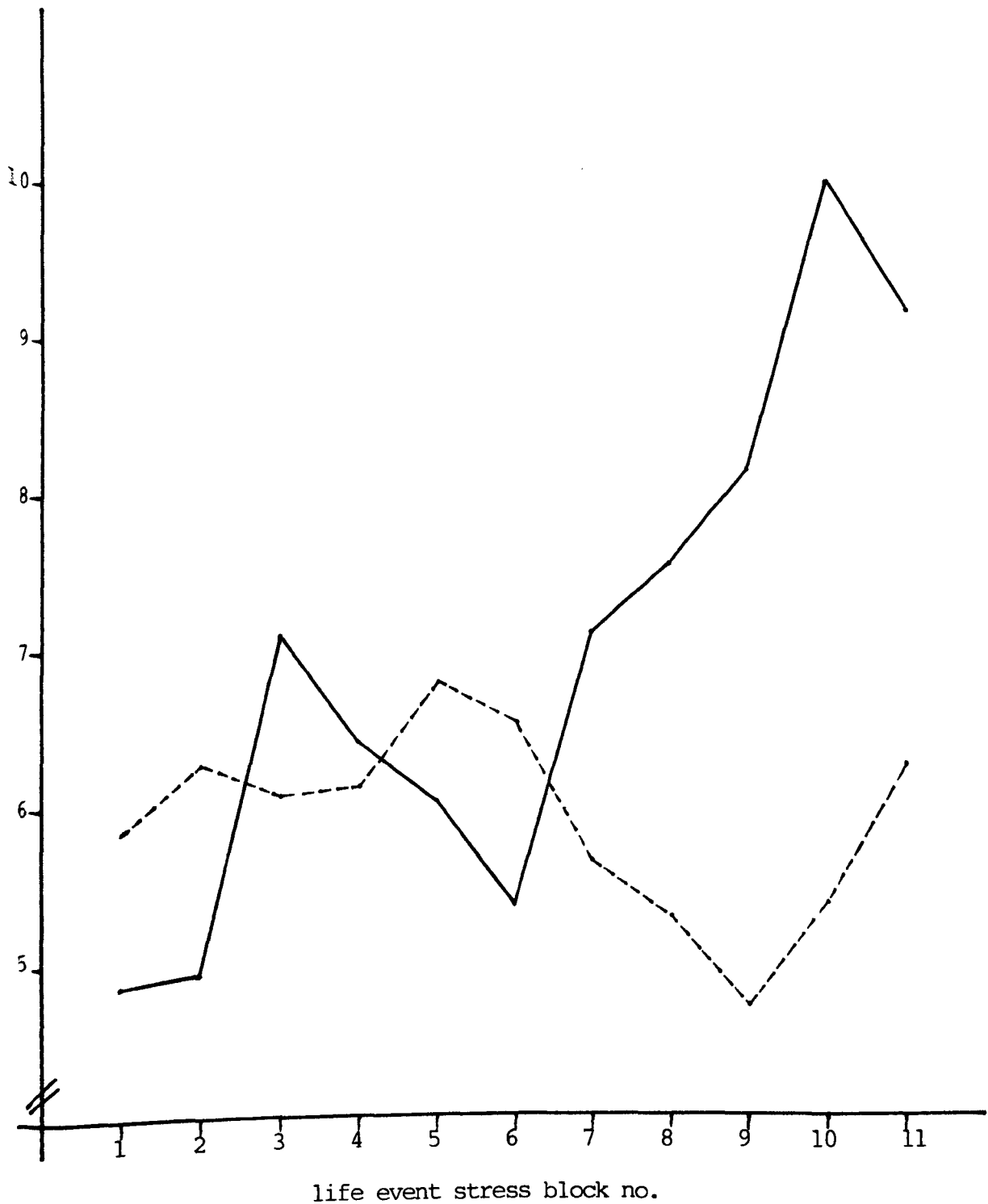
status as predictors of total PSE symptom score and Beck depression scores. Analyses were performed separately for instrumental and expressive support.

A significant three way interaction was found between life event level, expressive support and paid employment [F(2,148)=3.16, p<.05] when predicting PSE scores. The breakdown of means is given in Table 6.3. To test whether this result was due to other differences between employed and nonemployed mothers, analyses of covariance were performed with age, number of children, housing difficulties and money difficulties as covariates. The interaction was unchanged by the addition of these covariates, with the exception of money difficulties, which reduced the significance of the interaction term [F(2,147)=2.92, p<.10).

Because the expressive social support variable is trichotomous, with the largest group of respondents in the medium category, there is a danger that small numbers of subjects in some cells might lead to unreliable results. For this reason, and for this analysis only, the expressive support variable was dichotomized, with the midpoint of the 'medium' group decided on the basis of the instrumental support variable. This was done by standardising the means of the the two measures to zero and the standard deviations to 1. The two scores were then summed and the sample divided at the median to give high and low composite support groups. The previous analysis was repeated with this composite support measure. The three way interaction remained significant [F(1,164)=4.50, p<.05], and is illustrated in figure 6.3.

Table 6.3: **Breakdown of PSE scores by stable employment status, severe life event and expressive social support**

| | | Severe life event | | | No severe life event | | |
		low ESS	med ESS	hi ESS	low ESS	med ESS	hi ESS
unemployed mothers (n=93)	mean	8.30	8.76	6.10	7.91	3.97	2.77
	(s.d.)	(5.46)	(7.69)	(4.04)	(7.99)	(3.66)	(5.54)
	n	10	17	10	11	32	13
employed mothers (n=79)	mean	16.00	8.47	1.25	5.44	3.93	2.50
	(s.d.)	(14.88)	(6.48)	(1.50)	(5.57)	(5.90)	(2.37)
	n	4	15	4	9	31	16

Figure 6.3

**Interaction diagram. PSE symptom score by employment status,
severe life event and level of social support.**
Severe event (solid line), no severe event (broken line).
High social support (triangles), low social support (circles).
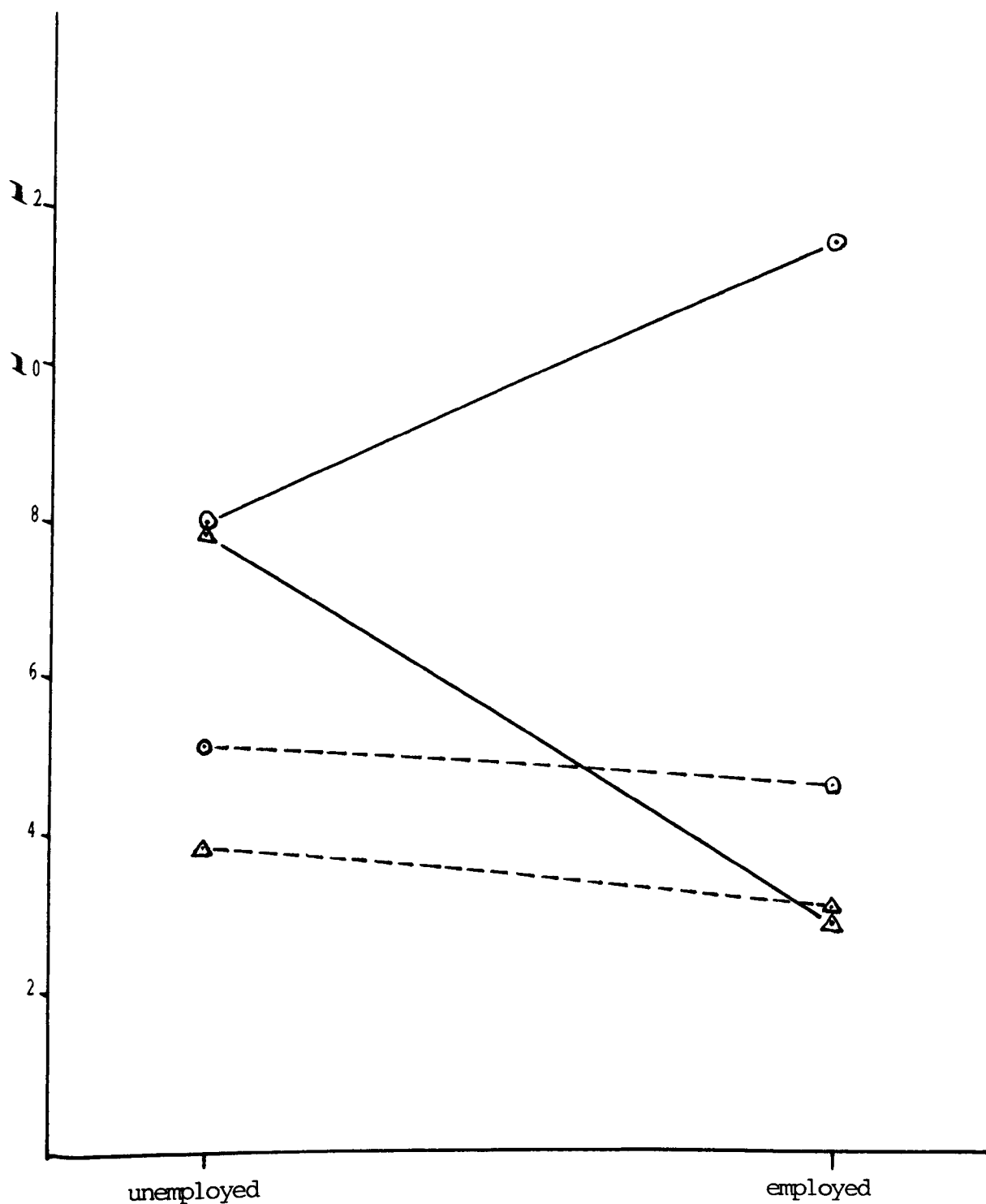
Examination of the PSE means in Table 6.4 and Figure 6.3 shows that paid employment was only associated with symptom levels for women who had suffered a severe life event. However, whether the association was positive or negative depended on social support. Women who had paid employment and also social support had PSE scores which were extremely low, and quite uncharacteristic of the severe life event group as a whole. The possibility remained that the women in this group had suffered life events which, although classified as 'severe' were less severe, of a different type or less recently experienced than their nonemployed counterparts. To check this, each employed woman in this severe event/high support group was matched with a nonemployed counterpart who was equivalent for event type (eg bereavement), severity (1 or 2 on long term threat) timing (months since the event occured). These women were also matched for number and average age of children. Despite not differing on these variables, the PSE scores of the two groups were still significantly different at 2.78 (sd 2.59) and 7.89 (sd 6.77) respectively (t=2.11, df=15, p=.05).

For those women who were already at very high psychosocial risk, due to life event stress and social support deficits, paid employment was associated with high levels of symptomatology. This unexpected finding suggests the possibility that under certain unusual circumstances, paid employment, when combined with the care of young children in the absence of social support and having suffered a severely threatening life event, can be a further source of stress rather than a benefit.

TABLE 6.4

Breakdown of PSE scores by stable employment status,
life event category and overall social support

| | | Severe life event | | No severe event | |
		low support	high support	low support	high support
unemployed	mean	7.95	7.86	5.19	3.83
mothers	(s.d.)	(6.30)	(6.40)	(5.85)	(4.96)
(n=93)	n	22	15	26	30
employed	mean	11.55	2.87	4.61	3.03
mothers	(s.d.)	(9.44)	(2.75)	(6.35)	(3.64)
(n=79)	n	15	8	26	30

6.4 Discussion

There was a striking absence of paid employment effect on the mental health of mothers in this study, using a wide range of measures of psychiatric symptomatology, depression, anxiety, positive and negative affect in addition to a psychiatric case criterion. The exception to this was that nonemployed mothers had significantly higher levels of self depreciation. These findings are consistent with many other studies of mothers with dependent children (Warr and Parry, 1982a) which find that, unlike samples of men or single women without children, mothers are not adversely affected by the lack of employment. Despite this evidence, a number of authors have suggested that unemployment is a major determinant of the sex differences observed in married people (Bebbington et al., 1981; Cochrane, 1983:58; Gove, 1972). Perhaps the most influential of these has been Gove's (1972) sex role theory of depression. This hypothesizes that married women are at higher risk of depression than men because they more often occupy only one social role, that of homemaker, and do not have a second role available to them. Evidence from community surveys that women are more depressed than men irrespective of marital status has already led to a re-appraisal of this theory (Aneshensel et al., 1981; Fox, 1980; Warheit et al., 1976; but see Bebbington et al., 1981, for a conflicting result). Evidence that mothers are not disadvantaged by unemployment is further reason to regard it as insecurely founded.

Shehan (1984) has proposed a reformulation of Gove's theory which incorporates a consideration of the costs and benefits of employment

for mothers in terms of existing social support and satisfaction with the domestic role. A similar approach was taken by Warr and Parry (1982a) who hypothesized that employment outside the home would only be beneficial where social, financial and psychological needs were not met within the domestic role. These approaches suggest that caring for young children is socially legitimate work and that many mothers make a rational choice not to do additional work outside the home. As the tasks of childcare and homemaking are often personally meaningful, commitment to the employment role may be low for mothers at this life stage. Employment commitment is known to be an important moderator of the effects of unemployment in men (Warr, 1978) and is probably one reason for the lack of employment effects in samples of mothers. The present study focuses on part-time employment as the most common for mothers with dependent children, particularly at preschool age. Employment commitment was not measured directly. For these reasons, it is not possible to generalize from these findings to mothers employed full time, particularly in high-commitment career occupations.

Having found that for the sample as a whole there were no employment effects, analysis of interactions revealed circumstances where employment was of benefit to mothers. For mothers at higher risk of psychiatric symptomatology because of life event stress, there is more evidence of paid employment effects, consistent with findings from Brown and Harris (1978) and Bebbington et al (1981). It may be that having paid employment outside the home increases the threshold of the level of life event stress which can be tolerated before psychiatric symptom-atology results (see figures 1 and 2). Generally, mothers without paid

employment were found to be more self depreciating, which is consistent with their being more responsive to moderate levels of life event stress.

Amongst those women with high levels of life event stress, we found some evidence that the effects of paid employment outside the home are related to the level of social support available. Employment seems to be most beneficial in buffering the effect of a threatening life event where there is adequate expressive support available and no financial difficulties. This is consistent with earlier findings that husbands' support with childcare mediates the effects of employment on wives' wellbeing (Kessler & McRae, 1982; Ross et al, 1983).

Particularly high levels of psychiatric symptomatology were found in one subgroup: employed mothers who had suffered a severe life event and lacked expressive support. This combination of factors is relatively rare, and even in this carefully selected sample relatively few such women were found. Although a deleterious effect of paid employment has not been reported before (Warr and Parry, 1982a) this finding does raise the possibility that employment in addition to childcare may produce stressful overload in some cases. It should be remembered that the inclusion of money difficulties as a covariate reduced the strength of this interaction, suggesting that mothers in this position may also have been under financial strain which is a confounding factor. For this sample, we speculate whether those mothers who, despite a severely stressful event and the lack of expressive support, undertook paid employment outside the home may have been forced to do so through financial necessity.

Consistent with previous studies, life event stress and the absence of instrumental and expressive social support were found to be associated with higher levels of psychiatric symptomatology and psychological distress. Having experienced a severely stressful life event in the previous 12 months had a more striking relationship with psychiatric symptomatology than it did with other measures of psychological distress and well-being, where the effects were rather modest. Both instrumental and expressive social support were found to be more strongly related to the continuously distributed measures of psychological distress than was life event stress. We examine elsewhere the issue of whether social support has a stress buffering or an independent effect in these data (Parry and Shapiro, 1986), finding evidence that the lack of support is disadvantageous whether or not the mother has suffered a severely threatening event.

We did not find that the presence or absence of a pre-school child had any effect on the mental health measures. These results strongly suggest that having a child under school age may not be the most crucial risk factor. A similar point was made by D'Arcy and Siddique (1984) who also failed to find a direct effect of preschoolers. The present study excluded all mothers with a child under 18 months, and it is possible that the most demanding period of childcare is ending by this time. In addition to the possibility that children aged between two and four impose less strain, studies which include a pre-school child variable without excluding very young infants may be measuring post-natal depressions specific to the life event of having recently given birth. Research should move towards evaluating more precisely

the relative effects of caring for children at different developmental stages within the preschool period.

Unlike some previous workers (Colletta, 1983; McGee et al., 1983; Pearlin and Johnson, 1977) we did not find much evidence associating single parenthood with psychiatric symptoms or psychological distress. The exception to this was that single mothers scored more highly on Bradburn's negative affect measure. Previous studies have suggested that single parenthood is a source of strain particularly because of financial hardship and social support deficits. In the present sample, we did not find single parenthood to be associated with these factors, which may be due to the traditional arrangement whereby a high proportion of single mothers live in one household with their families of origin who provide some of the social and financial support otherwise provided by the husband. In addition, many of the married women in the sample suffered financial difficulties and social support deficits despite their marital status. These results, although possibly relating to local circumstances or unrepresentative sampling, confirm Thoits' (1982) view that it is unwise for researchers to use marital status as a proxy variable for social support.

It is important to relate studies of employment and mothers' mental health to unemployment research in general, although there are some difficulties in doing so. For many working class mothers, as for middle class mothers, the lack of paid employment is not in itself detrimental to mental health. This stands in contrast to studies of unemployment in single women wage earners and in men, which are

unanimous in finding lowered mental health in unemployed groups, both

in cross-sectional and longitudinal research. The comparison is

problematic because many mothers of young children do not want to enter

the labour market. It must be emphasized, however, that this lack of

employment commitment represents a heightened commitment to other

personally valuable goals. Where men are equally committed to

non-employment activities, for example undertaking unpaid work with

political and neighbourhood associations, there is evidence that they

are not adversely affected by unemployment (Fryer and Payne, 1984). As

long term changes in unemployment patterns are predicted for Western

society, it is important to learn more about the social processes

whereby some unemployed people, but not others, have socially

legitimate and personally meaningful work available outside the

employment context. Mental health implications of unemployment will

remain, on the other hand, where it is associated with self-esteem

deficits, a lack of social support and with financial strain.

CHAPTER SEVEN: SEX ROLE BELIEFS, WORK ATTITUDES AND MENTAL HEALTH

IN EMPLOYED AND NONEMPLOYED MOTHERS

7.1 Introduction

There is a continuing trend for mothers with dependent children to be
employed outside the home. The proportion of mothers in paid employment
has increased substantially in recent decades (Central Statistical
Office, 1979; Gowler & Legge, 1980) and approximately half of all women
with dependent children are in paid employment (Office of Population
Censuses & Surveys, 1979), the majority employed part time (Rimmer &
Popay, 1982; Arber, Gilbert & Dale, 1985).

Whether paid employment is associated with improved mental health for
mothers has been widely examined. Gove (1972) accounted for the higher
rates of depression in married women than married men in terms of the
restriction in social roles available to them. In this formulation,
women engaged in full time childcare and homemaking were thought to be
at the greatest risk of mental health problems. Evidence from a number
of studies indicates that, generally speaking, this is not the case
(Aneshensel, Frerichs & Clark, 1981; Gove & Geerken, 1977; McGee,
Williams, Kashani & Silva, 1983; Moss & Plewis, 1977; Radloff, 1981;
Sharp & Nye, 1963; Shehan, 1984; Stewart & Salt, 1981; Walker & Walker,
1980; Welsh & Booth, 1977). We have suggested, in a review of these
findings, that they differ from those on male unemployment because child
care and homemaking are socially legitimate and personally meaningful

work roles (Warr & Parry, 1982a, see appendix A). Indeed, most of these mothers do not register as unemployed and are not seeking paid employment. The term 'unemployed' can be restricted to those who would prefer to be in the labour force, and we use the more general term 'nonemployed' here.

Differences between employed and nonemployed groups of mothers on a range of mental health measures are found only exceptionally, but have been reported more often among working class mothers (Welsh & Booth, 1977; Bebbington et al, 1981; Cochrane & Stopes-Roe, 1981; Warr & Parry, 1982b, see Appendix B), leading us to examine more closely the mental health correlates of paid employment in this group. In a previous paper, we reported differences between employed and nonemployed mothers' mental health only in a group already at high risk of developing depression: those having suffered a severely threatening life event. Among these mothers, women with employment and good social support had significantly lower levels of depression and anxiety (see Chapter Six).

This finding confirmed our view that global comparisons of employed and nonemployed mothers are likely to be less informative than those which take into account other factors which may affect the impact of employment. In this regard, Shehan (1984) has argued, whilst addressing Gove's social role formulation, that the mother's own attitudes to her home and employment roles are important but often neglected factors. The present paper aims to examine the mental health correlates of four sets of attitudes in a sample of employed and nonemployed working class mothers; sex role beliefs, attitudes to the homemaker/childcare role, to the employment role, and to the role conflict between the two. The

relationship between satisfaction with unwaged work within the home and mental health is of particular interest, and this may differ between employed and nonemployed mothers. In addition to attitudes to the home role, it is likely that sex-role beliefs and, for employed women, job satisfaction are related to mental health (Kessler & McRae, 1982). The relationship between mothers' work attitudes and psychological distress has been relatively little researched compared to that of paid employment itself.

Cleary & Mechanic (1983) found the satisfaction of mothers with their homemaker role to be significantly related to depression in a study of 181 employed married women and 149 full time homemakers, where the two groups were found to have equivalent scores on a simple measure of homemaker satisfaction. However, the relationship between this and depression was higher for the nonemployed than the employed women. The authors suggest from this and other findings that the homemaker role is more salient for nonemployed mothers. The present study investigates the relationship between domestic role satisfaction and a range of mental health measures for employed and nonemployed mothers of young children. Unlike previous studies which have tended to use one question to tap home role attitude, we used a validated measure known to be reliable in samples of working class mothers (see section 5.4).

For mothers who do have paid employment outside the home, the association between job satisfaction and mental health is of interest. A number of authors have suggested that job-related strains have less effect on the well-being of women than men (Kessler & McRae, 1982;

Pearlin, 1975; but see also Miller, 1980). Blumental & Dielman (1975) found that the relationship between job dissatisfaction and depression was greater for men than for women. Similarly, Sekaran (1985) found a direct relationship between job satisfaction and mental health for husbands but not for wives in a study of 166 dual earner families.

Kessler & McRae (1982) suggest that women derive job satisfaction from characteristics of work less directly tied to objective job rewards than men, and Miller (1980) also found sex differences in which aspects of jobs influence satisfaction. Many job attitude measures are based on male samples (eg Warr et al., 1979) with the danger that sex-specific assumptions are built into the measurement of job satisfaction. The present study uses a measure of job satisfaction developed for use in this sample (see section 5.4).

Papers in this field have often used simple distinctions between nonemployed and employed mothers without specifying whether full or part time employment is involved (Warr & Parry, 1982a, Appendix A). In addition, 'part-time' employment could vary between two or three hours to 30 hours per week. With rare exceptions (Welsh & Booth, 1977), respondents who have recently changed their employment status are typically included, so that mothers who have stopped working outside the home only weeks before would be designated 'nonemployed' and vice versa. These definitional confusions point to the need for more precise specification of the employment status variable. The present study compared those mothers in stable part-time employment (defined as over 10 hours per week) with nonemployed mothers, excluding those who have changed

their employment status within three months prior to interview. Over 75%
of employed working class women with dependent children under 16 are
likely to be in part time jobs (OPCS, 1979) and given our preference not
to treat employment as an homogeneous category, the decision to exclude
full time employees from this sample was taken after preliminary analysis
had revealed that there would be too few to analyse separately. Details
of the number excluded are given below, and the implications of this
decision are examined in the discussion.

One important aspect of the quality of the employment relationship for
mothers is the extent to which a conflict between home and employment
roles is experienced. Shehan (1984) found that employed mothers in her
sample of clerical workers and nonemployed controls worked significantly
longer hours than nonemployed mothers because of the demands of both
roles. Evidence of role conflict was also found by Cleary & Mechanic
(1983) where the relationship of childrearing strain with psychological
distress was more marked for employed mothers. In an analysis of data
from the General Household Survey, Arber et al. (1985) also found
evidence of role overload in mothers of young children who worked full
time outside the home, who reported higher levels of illness compared to
part-time or nonemployed mothers.

Most research which examines inter-role conflict in married women in the
workforce has used samples of highly educated women experiencing role
conflict in following high level careers. It has sometimes been assumed
that these women are at greatest risk of role conflict. However,
contrary to their expectations, Holahan & Gilbert (1979) found higher

levels of role conflict in married women with non-career jobs than those with careers. They interpret this result as reflecting the unwillingness of non-career women to relinquish the responsibilities of their roles as wives and mothers. The non-career jobs in this study were, nontheless, middle class, and studies of role conflict in working class mothers are exceptional. In one such study, Warr & Parry (1982b, Appendix B) found that women with full time employment reported higher levels of dual role conflict than those with part time jobs. The present study of working-class mothers examines the correlates of dual role conflict in a part-time employed group, homogeneous for hours worked outside the home, using a valid and reliable measure developed for this purpose (Parry & Warr, 1980).

The relationship of sex-role beliefs to the wellbeing of employed and nonemployed mothers is little understood, particularly in working class samples. Ferree (1980) found that working class women in paid employment had more liberal attitudes than their nonemployed counterparts. Kessler & McRae (1982) suggested that sex-role beliefs may influence the association between paid employment and mental health. They argued that employment would only benefit those women who had sex role beliefs which were consistent with their employment status. They used no direct measure of sex-role belief, but used age and social class as proxy variables, obtaining results that were not consistent with the hypothesis. The present study investigates this directly by using a well established measure of sex-role beliefs (Spence & Helmreich, 1973) in a version developed to be valid and reliable in British general population samples (see section 5.3).

A common difficulty in studying the relationship between attitudes and mental health is that high correlations may be due to contamination between the measures. Whilst this problem can never be entirely overcome, the present study seeks to reduce the danger of spurious association by using a range of measures selected to tap different aspects of psychological distress and psychiatric symptomatology, using both self report and structured interview methods. This enhances the convergent validity of positive findings, compared to studies which are dependent on a single measure of, for example, self-reported depression.

A second problem with survey research is that the effects under investigation, although statistically significant in large samples, are often only modest in magnitude. It has been argued that psychological research should be more concerned with replicability as a crucial test of the presence or absence of an association than with statistical significance (Lykken, 1968). For this reason, the main findings have been examined again in data from a separate study kindly made available for this purpose by the investigators. Details of this replication sample are given below.

7.2 Method

Sample

One hundred and sixty working class women with young children living in Sheffield, UK, were interviewed as part of a larger survey (Parry, 1986;

Parry and Shapiro, 1986). All the women were married or living with a common law husband, had at least one child between four and seven, and no child under 18 months. Socio-economic status was assessed using the Registrar General's classification, in respect of a woman's own job (where employed) or her husband's present or most recent job, whichever was the higher. On this criterion, only families in skilled, semi-skilled and unskilled manual occupational groups (IIIM, IV and V) were selected for interview. Respondents were contacted via statutory registers of births held at local child welfare clinics. Interviews were conducted by trained social science graduates in the women's own homes, under the supervision of an experienced clinical psychologist. A sampling strategy was adopted to ensure that there were approximately equal proportions of employed and nonemployed mothers who had a preschool child, as this is often confounded with employment status in general population samples. Full details of the screening procedure and sample characteristics are available elsewhere (Parry, 1986; Parry & Shapiro, 1986) As there were too few to examine separately, 17 full time employed mothers were excluded from the sample.

Measures

Homemaker role satisfaction, job satisfaction and dual role conflict were measured using the Parry and Warr (1980) Home and Employment Role Scales (HER scales). These scales were developed through a questionnaire investigation of a separate sample of 185 working class women from ten widely dispersed sampling areas in the mainland United Kingdom. Items were derived from pilot interviews to be relevant to and

easily understood by a wide range of women, including those from educationally disadvantaged backgrounds. Each twelve item scale taps aspects of homemaker satisfaction (eg 'My family really shows that they appreciate all I do for them'), job satisfaction (eg 'There is a happy atmosphere in the place where I work') and dual role conflict (eg 'The hours I work make it very difficult to look after the children') respectively. Coefficient alphas in the validation study were .71, .78 and .75 for home, job and dual role scales respectively.

Sex role beliefs were assessed using the British version of the Attitudes to Women Scale (AWS-B: Parry, 1983). This 21 item scale was developed from the American AWS (Spence and Helmreich, 1972) by rewording items to be suitable for educationally disadvantaged general population samples. The scale taps beliefs about appropriate behaviour for women and their position in society (eg. 'If a woman goes out to work her husband should share the housework; such as washing dishes, cleaning and cooking', 'There are many jobs that men can do better than women'). Coefficient alpha in the working class validation sample was .77.

Psychiatric symptomatology was assessed using the standardized psychiatric interview described by Wing, Cooper and Sartorius (1974). The 9th edition of the Present State Examination (PSE) was designed for use as a screening measure in general populations and establishes through interview the degree to which each of 60 symptoms is present (Wing, 1980). The total number of symptoms found using the PSE were summed to give a continuously distributed measure of psychiatric

symptomatology.

Psychological distress was measured using a range of questionnaire methods. The Beck Depression Inventory (Beck et al., 1961) is a widely-used 21 item measure of the behavioural manifestations of depression, irrespective of clinical diagnosis. The somatic anxiety scale of the Multi-component Anxiety Scale (Schalling, 1975) gave a brief measure of anxiety-related physiological arousal. Bradburn's five item measure of negative affect (Bradburn, 1969) assessed recent levels of unpleasant feelings without reference to psychiatric assumptions. A measure of self depreciation was also included, consisting of the negatively worded items from Rosenberg's (1965) self esteem measure.

Independent replication

The measures of homemaker satisfaction and sex role beliefs described above were included in a separate study (Sinha and Taylor, 1985) so making it possible to attempt replication of significant findings from the Sheffield data.

Replication sample

200 mothers of young children aged between 3 and 14 years were contacted via the age/sex register of a health centre in Southampton and interviewed in their homes by two 4th year medical students.

They were selected at random from a larger pool of 380 eligible mothers. The measures of sex-role beliefs and work attitudes were identical in this replication, as were the procedures for assigning women to social class groupings The class distribution was heterogeneous and comparable to that of the city as a whole: 1.2%, 17.7%, 50.8%, 20.8% and 9.4% in social classes I to V respectively. The employment status variable was unrefined in the replication sample, so that full time employees were included (n=24).

Measures of mental health

Psychological distress was assessed by the 30-item General Health Questionnaire (GHQ; Goldberg, 1972), a short self administered questionnaire designed for use in community settings. Psychiatric symptoms of depression and anxiety were assessed by structured psychiatric interview, the Clinical Interview Schedule (CIS; Goldberg et al., 1970).

7.3 Results

Sociodemographic characteristics

The final sample included 86 nonemployed and 74 employed women, who had a median age of 30 (range 22-43). Fourteen per cent had one child, 55% had two children and 31% had three or more children. Sixty-four per cent, 16% and 20% of the mothers were in skilled manual, semi-skilled manual and unskilled manual socioeconomic groups respectively. (These

figures reflect the socio-economic breakdown of the city itself, where the comparable proportions are 66%, 19% and 15% respectively). Seventy-two per cent of the women's husbands were in full-time employment, 13% in short-time employment and 15% were unemployed. The employed and nonemployed groups did not differ significantly with regard to age, number or ages of children or social class.

The employed women in the sample worked outside the home a median 17 hours per week in a variety of manual occupations, including most commonly: cleaning (27%), catering (18%), machine operation (18%) and shop work (13%). Of the 57% of employed women with pre-school children, the commonest form of childcare arrangement was a play group or part time nursery (37%), with almost as many employed mothers having their children cared for at home, usually by the husband or her own mother (38%). Only 9% of employed mothers' preschool children were in full time nursery education.

Domestic and employment role attitudes and psychological distress

Means and standard deviations for all attitude measures are given in Table 7.1 for employed and nonemployed mothers, both for normative purposes and to allow examination of range effects.

It will be seen from Table 7.1 that the employed mothers do not differ from the full time homemakers in their satisfaction with the domestic role. For the sample as a whole, a strong and consistent relationship was found between domestic role satisfaction and all the measures of

mental health and self esteem (product moment correlations ranged from .25 to .63). This suggests that there may have been overlap between the measures of satisfaction and psychological distress. This could be due either to shared method variance or, more fundamentally, both measures could be tapping a general 'displeasure' factor. The high correlation with the PSE symptom score (-.37) tends to discount the first possibility, as this is interviewer rated, not a self-report measure, and was obtained on a different occasion. The second possibility will be considered later.

Table 7.2 shows that when the correlations for employed and nonemployed mothers are examined separately, although all reach statistical significance in a sample of this size, there was a consistent trend for the relationship between distress and dissatisfaction with the domestic role to be stronger for the nonemployed mothers. Means and standard deviations in Table 7.1 demonstrate that this was not due to range effects. However, despite this being a consistent difference, for none of the measures individually is the difference between the correlations statistically significant. This trend was examined in the Southampton data (Table 3) where it was found that the relationship between low home role satisfaction and psychological distress was also weaker for the employed than the nonemployed mothers, the difference reaching statistical significance for depression and anxiety, $(z_1 - z_2 > .24$, $\sigma = .147$, $p < .05)$ but not for GHQ.

For the employed mothers, job satisfaction was not highly associated with the measures of distress, only a modest relationship with

Table 7.1: Sheffield data. Means and standard deviations of the whole sample, employed and nonemployed groups on attitudinal measures

	All mothers mean sd (range)		Nonemployed mean sd (range)		Employed mean sd (range)	
Homemaker satisfaction	26.26	5.53	25.98*	5.66	26.59*	5.40
	(14 - 36)		(14 - 36)		(16 - 36)	
Sex role beliefs	27.97	5.70	27.13^+	5.70	28.97^+	5.58
	(10 - 41)		(10 - 38)		(16 - 41)	
Job satisfaction	-	-	-	-	28.09	5.41
					(15 - 36)	
Dual role strain	-	-	-	-	16.00	3.85
					(12 - 26)	

Notes

$+$ * Non-significant difference between employed and nonemployed

Table 7.2: Sheffield data. Product moment correlations between attitudinal and well-being measures

	PSE	Beck	Anxiety	Negative affect	Self depreciation
Home role satisfaction					
employed (n=74)	-.32*	-.47*	-.40*	-.34*	-.36*
nonemployed (n=86)	-.41*	-.62*	-.51*	-.51*	-.52*
Sex role beliefs					
employed (n=74)	-.21:	-.15	-.18	-.02	-.06
nonemployed (n=86)	.08	-.09	.19:	-.13	-.21:
Job satisfaction					
employed	-.06	-.20:	-.11	-.18	-.03
Dual role conflict					
employed	.24:	.33+	.21+	.17	-.10

* p<.001

+ p<.01

: p<.05

Table 7.3: Replication sample. Product moment correlations between home role satisfaction and well-being measures

	GHQ	Depress	Anxiety
Home role satisfaction			
employed (n=126)	-.17	-.12	-.09
nonemployed (n=73)	-.31	-.38	-.32

depression being found (Table 2). This bears on the possibility mentioned above, that the domestic role satisfaction scale and distress measures are tapping a general factor. These results do not support this interpretation, as there is no a priori reason why one satisfaction scale should tap this more than the other. This suggests that the strong relationship between domestic role satisfaction and distress is not an artefact due to contamination between measures.

There was a consistent trend for the experience of conflict between the homemaker and the employee roles to be more highly associated with symptoms, depression and anxiety than was job satisfaction itself (Table 2). This difference was statistically significant only for the Beck Depression Inventory (Hotelling's t = 2.43, p < .01).

These results suggest that the homemaker role was salient for both employed and nonemployed women and that dissatisfaction in this role had implications for their psychological health. The relationship between homemaker role dissatisfaction and psychological distress was most marked for full time homemakers. Dissatisfaction with the job itself was not consistently associated with measures of mental health in this sample of mothers.

Sex role beliefs, work attitudes and mental health

AWS-B scores were not associated with employment status or with any of the measures of psychological distress for the sample as a whole, nor were sex role beliefs associated with homemaker role satisfaction, job

satisfaction or dual role conflict. When employed and nonemployed groups were examined separately, it was found that there were significant correlations between sex role beliefs and the mental health variables which differed between the groups (Table 2). For employed women, liberal attitudes were associated with lower PSE scores but there was no association for the nonemployed group. This difference was statistically significant ($z_1 - z_2$ = .29, σ = .162, p<.05). Traditional attitudes were associated with self-depreciation for nonemployed mothers only, but this difference in correlations did not reach statistical significance. On the somatic anxiety measure, traditional attitudes were associated with higher scores for employed mothers but with lower anxiety scores in the nonemployed group ($z_1 - z_2$ = .37, σ = .162, p<.05). This interaction effect can be best depicted by two way analysis of variance.

This was done by dichotomising the AWS-B variable at the median and applying a two-way analysis of variance (ANOVA subprogram of SPSS; Nie et al., 1975) of anxiety scores by paid employment (yes/no) x attitude to women (liberal/traditional). A significant two way interaction was obtained ($F(1,160) = 3.99$, p<.05) where nonemployed mothers with liberal attitudes and employed mothers with traditional attitudes were most anxious. This was not due to the specific item 'A woman's place is in the home looking after her family', as when this was excluded from the AWS-B scale and the procedure repeated, the interaction effect was still evident ($F(1,160) = 3.60$, p=.06). The interaction did not reach significance with any other mental health measure, although there was the same trend for PSE ($F=2.24$, p=.12) and self-depreciation ($F=3.70$, p=.08).

F-values for the other measures were less than 1.

As the interaction term was only significant for one of a number of measures the possibility that it was a fluke result was tested by a multimethod replication. The six anxiety symptoms within the PSE (freefloating anxiety, anxious foreboding, panic attacks, situational anxiety, social anxiety and phobic anxiety) were summed to test whether the interaction obtained from the questionnaire method was replicated using the interview method. Results of a two-way ANOVA showed a significant interaction for this anxiety subscale (F(1,160)=3.89, p<.05) which was not present for the PSE non-anxiety symptoms (F=1.30, ns). The interactions for both the somatic anxiety scale and the PSE autonomic anxiety scale were found to be of a similar pattern and are shown in Figure 7.1a,b.

As a specific effect for anxiety was unpredicted, a replication was attempted using data from the Southampton sample. High and low AWS groups were defined by the median for this sample. The dependent measures here were the GHQ, interviewer-rated anxiety and depression. A significant interaction, with a similar pattern of means, was obtained for the anxiety measure only (F(1,198)=5.02, p<.05). The corresponding F ratios for GHQ score and depression were less than 1.

Consistent with previous findings (Parry, 1983, see 5.3) sex role beliefs were related to social class in this sample (r=-.23, p<.01). For this reason, a subsequent analysis entered social class as a co-variate but the significance of this interaction was unchanged (F(1,198)=5.01, p<.05),

Figure 7.1a & b

Interaction diagrams. a) Somatic anxiety b) PSE anxiety symptoms in employed and nonemployed mothers with liberal (solid line) and traditional (broken line) attitudes.

Figure 1a.

Figure 1b.
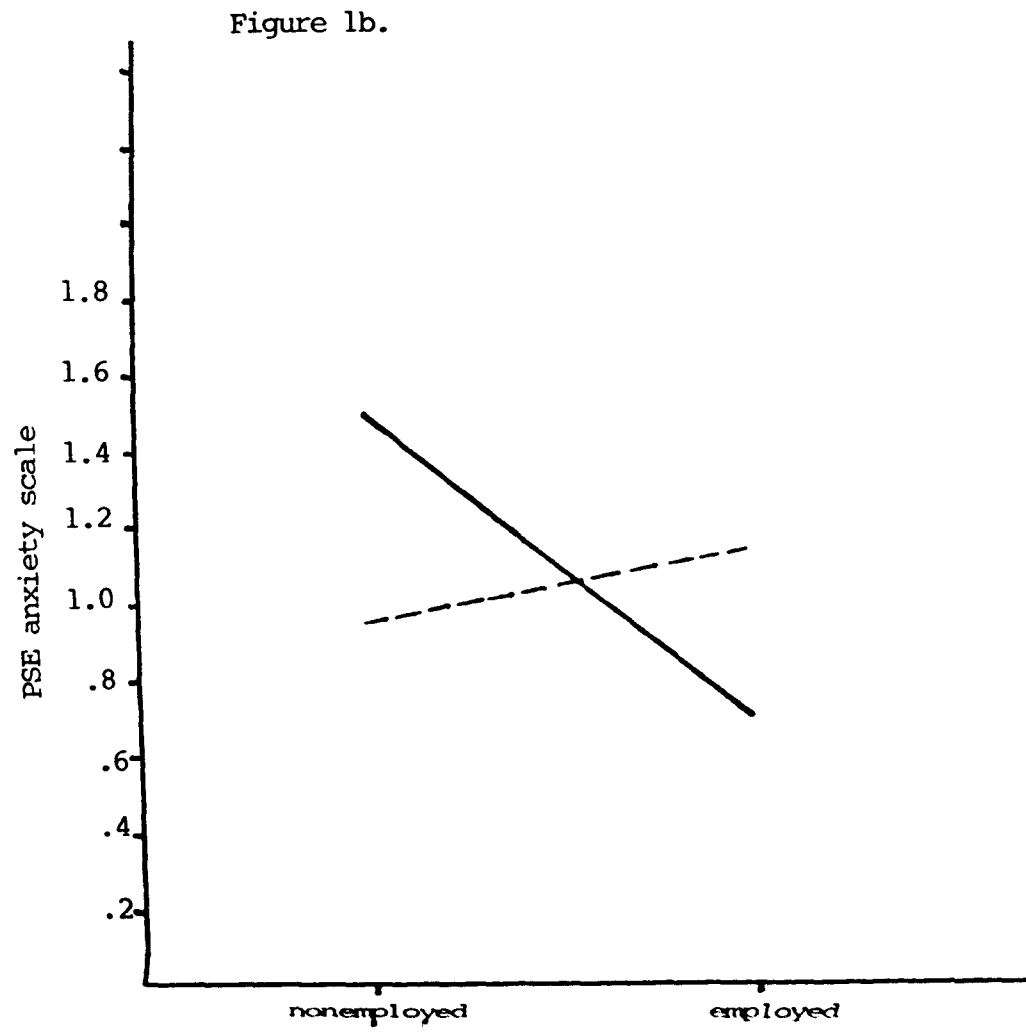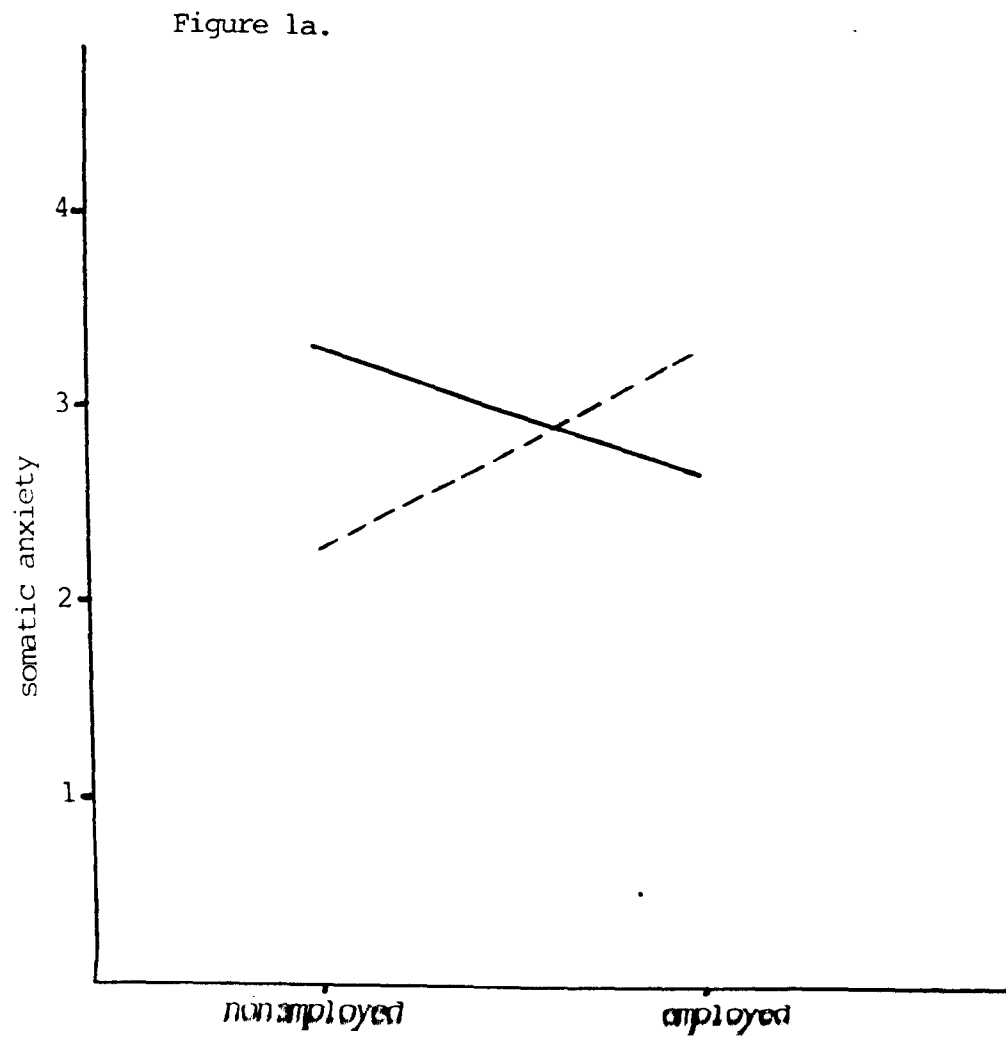
demonstrating that it was sex-role beliefs not socio-economic status which were producing the effect.

Although there was no significant three-way interaction between sex-role beliefs, social class and paid employment ($F<1$), the two-way interaction was examined in working and middle class groups separately because of the known relationship between sex-role attitudes and socio-economic status. The AWS-B median for each group was used to derive a dichotomous 'liberal/traditional' variable adjusted for social class. There was no evidence of an interaction effect for the middle class mothers ($F<1$), as this was confined to the working class group ($F(1,98)=2.39$, $p=.12$). Although the reduced sample size in this analysis reduces statistical significance, the effect is of a similar magnitude to that found in the first sample.

There appears therefore to be a modest but replicable interaction effect where working class mothers whose employment status is discordant with their sex role beliefs are likely to have higher levels of anxiety. In these cross-sectional studies, it is not possible to ascertain the direction of cause.

7.4 Discussion

The relationship between dissatisfaction with the homemaker role and depression reported by Cleary & Mechanic (1983) was also found in the present study, which in addition found home role attitude to be signi-ficantly associated with anxiety, self depreciation and negative affect.

The comparison between employed and nonemployed mothers revealed no major differences between the groups on homemaker satisfaction or sex-role beliefs. There was some evidence consistent with the view expressed by a number of authors (Cleary & Mechanic, 1983; Pearlin & Johnson, 1977) that the domestic role is more salient for nonemployed mothers, in that the relationship between home role satisfaction and mental health was more marked for them, particularly in the replication. However, in this study the domestic role was important for all the mothers, particularly in the working class sample. Of the measures of psychological distress, job dissatisfaction was only significantly associated with depression scores, but entirely unrelated to psychiatric symptoms and self-depreciation. In contrast, employed mothers who experienced high levels of dual role conflict had more psychiatric symptoms and reported more depression and anxiety.

These results may have been influenced by the exclusion of 17 full time employees from the Sheffield sample. It could be argued that job satisfaction would be more highly related to mental health measures in a sample of full time employed women, since they could be expected to have higher levels of commitment to employment. It is worth noting, however, that an earlier study which compared 65 part time with 60 full time employed mothers showed a similar (non-significant) level of association between job satisfaction and measures of negative affect in each group (Warr and Parry, 1982b, Appendix B). In addition, data from the replication sample found a similar pattern, despite not excluding full time employees. In order to examine this issue properly, a study specifically sampling mothers with dependent children who hold full time

jobs is required, since unselected samples yield too small a proportion of such mothers to make systematic analysis possible.

The relationship of role conflict with depression and anxiety supports previous workers' findings that the parental role can be a source of strain for mothers (Gurin et al., 1960:117-142; Gove & Geerken, 1977), although of course they can not bear on the issue of these strains affecting women more than men (Cleary & Mechanic, 1983). The primacy of problems experienced in the childcare role for both employed and nonemployed mothers is consistent with Pearlin's (1975) view: '...we are led to the conclusion that role strains result not because women prefer employment outside the home but because they experience severer demands in their employment inside the home'.

The use of a measure of dual role conflict was also justified by the findings, suggesting that in future research with mothers, strain due to work demands in childcare or in paid employment should not be investigated separately without reference to the important relationship between the two roles.

There is no doubt that data from cross sectional attitude surveys must be interpreted with caution. There is a particular danger of over-interpreting weak associations which achieve statistical significance only because of the sample size. Another problem is how to decide whether correlations between attitudinal and mental health measures are due to shared method variance or to both measures tapping the same factor. This problem was to some extent overcome by the research strategies of

including a range of measures using different methods and by checking results in a replication sample. Because of these safeguards it is possible to be more confident that the association between home role attitude and distress is not an artefact, and that there is indeed a differential relationship of psychological distress to home role and job satisfaction. If, for example, the Beck Depression Inventory had been the only mental health scale used, it would have been difficult to discount the possibility of overlapping measures (see Table 7.2).

Consistent with previous studies of mothers, there was no overall association between employment status and the mental health measures in this sample. Sex-role beliefs did not differ between employed and nonemployed mothers, which is a failure to replicate Ferree's (1980) finding. Nor was there a general association between sex-role beliefs and psychological distress. There was however clear support for the hypothesis that sex-role beliefs can influence the association of paid employment with mothers' well-being, but only for anxiety. This phenomenon seemed to be confined to working class mothers. In this group, employed mothers with liberal attitudes and nonemployed mothers with traditional attitudes were the least anxious. The specificity of this finding in relation to anxiety was replicated twice, in a multimethod comparison and in a separate sample with different measures of depression and anxiety. There was a trend for the same interaction to be found for self-depreciation, but not for depression whether measured by self report or psychiatric interview.

Differential findings for anxiety and depression have rarely been reported by other authors, one exception being Kessler & McRae in their 1982 study of married women and men. They found that women in high income jobs with major responsibility for childcare were not depressed or subject to physical health problems, but that they were anxious. They interpreted this as an overload effect. However, no evidence was found in the present study that dual role conflict (an aspect of role overload) as differentially related to anxiety and depression. The specific finding for anxiety in the present study was not confined to employed mothers but was a function of scores in both employed and nonemployed groups.

One possibility is that liberal attitudes as measured by the AWS-B are related to the level of employment commitment, and that women who, for whatever reason, are occupying a role they have not personally chosen may experience anxiety, which is a response to threat, rather than depression, which is associated with loss. However, the data do not support this explanation, as one would expect the employed group to have higher levels of employment commitment than the nonemployed, whereas Table 1 shows no differences between the groups on sex-role beliefs. However, the present study did not measure employment commitment directly, so this remains an open issue.

As many studies have found them to be a group at risk to both anxiety and depression (Bebbington et al., 1981; Brown & Harris, 1978; Warren & McEachren, 1983) it is important to establish which combination of factors contributes most to the wellbeing of mothers caring for dependent

children at home. The present study supports Shehan's (1984) view that the current emphasis on social and demographic factors, such as paid employment, should be supplemented by greater awareness of the role of mothers' own attitudes.

CHAPTER EIGHT: SOCIAL SUPPORT AND LIFE EVENTS IN WORKING CLASS WOMEN: STRESS BUFFERING OR INDEPENDENT EFFECTS?

8.1 Introduction

The impact of major life events upon psychological well-being and psychiatric disorder is documented by many studies (Brown and Birley, 1968; Paykel et al., 1969; Birley & Brown, 1970; Bebbington et al., 1981; Myers et al., 1972; Myers et al., 1975; Dohrenwend & Dohrenwend, 1974; Brown et al., 1975; Tennant & Andrews, 1978). However, the modest size of the relationship has encouraged the investigation of other factors to explain why some individuals withstand severe events with little apparent psychological disturbance whilst others suffer psychiatric levels of distress in the face of little or no adversity (Rabkin & Struening, 1976). One attractive proposition is that the resources of the individual's social network, commonly subsumed under the term 'social support', may act to protect the individual from developing a psychological disorder in response to stressful life events (Caplan, 1974; Cassel, 1976; Cobb, 1976; Dean & Lin, 1977). Whilst formulations of this 'stress buffering' model differ in detail, they have in common the hypothesis that the associaton between life events and disorder is strongest in those groups which lack social support. This hypothesis is often stated in the complementary form, that the lack of social support is related to disorder only (or primarily) amongst those subjected to life stress.

An extensive literature addresses this hypothesis, with very mixed results. We consider below only those published studies which examined psychological responses to a stressful event, or used a measure of life event stress and therefore some studies related to social support are not included (LaRocco et al., 1980; Nuckolls et al., 1972).

Studies supporting the stress-buffering model include those by Brown and Harris (1978), Gore (1980), Paykel et al., (1980) and Cohen and Hoberman (1983). An illustrative finding is that of Paykel et al. (1980) who interviewed 120 mothers from 5 to 8 weeks post partum, and found that three variables reflecting the quality of the marital relationship were associated with depression only amongst women who had experienced an 'undesirable event'. For example, a poor overall marital relationship was rated in 76% of depressed but only 21% of non-depressed women who had experienced such an event, as against 29% of depressed and 19% of non-depressed women who had not experienced such an event.

In contrast, several studies have yielded evidence contrary to the stress buffering hypothesis, suggesting deleterious effects of an absence of social support irrespective of the presence or absence of stressful life events (Andrews et al., 1978; Lin et al., 1979; Bebbington et al., 1984; Williams et al., 1981; Aneshensel and Stone, 1982). Aneshensel and Stone (1982) interviewed 1000 adults and found

direct rather than interactive effects of life event stress, perceived strain, close relationships and perceived support upon depressive symptoms.

An intermediate group of studies has yielded a mixed picture, with some findings consistent with stress buffering effects of social support, and others indicative of direct effects (Warheit, 1979; Frydman, 1981; Pearlin et al., 1981; Turner, 1981; Solomon & Bromet, 1982; Turner & Noh, 1983). Frydman (1981) interviewed 220 parents and children with cystic fibrosis or leukemia and found direct effects of life event stress and three social support measures upon psychiatric symptoms. There was also a significant interaction between life events and one of the social support measures - interaction within the subject's neighbourhood - the pattern of which was consistent with the buffering model, for the cystic fibrosis group alone.

The diversity of findings obtained in this literature is not easy to interpret. Studies vary with respect to conceptualisation and measurement of life stress, social support and well-being and symptoms (Dean & Lin, 1977; Thoits, 1982). Authors also differ in their use, description and interpretation of statistical procedures in the analysis of data (Everitt & Smith, 1979). The present study addresses central issues of conceptualization, measurement and analysis in the evaluation of the stress buffering model.

Measures of life event stress range from checklists or inventories of events to interview procedures of varying complexity (Dohrenwend &

Dohrenwend, 1974; Rabkin & Struening, 1976). We used an interview rather than a checklist measure of life events to increase reliability and reduce contamination by means of Brown and Harris's (1978) 'contextual' rating of event threat, taking account of the circumstances of the event whilst remaining independent of the respondent's psychological reaction to it. The reliability of this procedure is well established (Tennant et al., 1979; Parry et al., 1981).

The conceptualization and measurement of social support ranges from reported quality of marital relationship to availability of support in a crisis (Andrews et al, 1978). Consistent with the formulations of Dean and Lin (1977), Kaplan et al. (1977) and Thoits (1982), we distinguished between instrumental and expressive types of social support and measured each via specific questions about the availability and use of resources (material and interpersonal, respectively) in order to reduce reactivity to the respondent's psychological state. The questions were tailored to the circumstances of the population under study.

Most studies have used questionnaire and checklist measures of symptoms, yielding continuously distributed indices of psychological distress. Some of these, such as the General Health Questionnaire (Goldberg, 1972) and Center for Epidemiologic Studies Depression Scale (Weissman et al., 1977) have been previously validated against psychiatric diagnosis. Other studies have used standardised psychiatric interview schedules, such as the Present State Examination

(PSE; Wing et al., 1974).   The present study combines a reliable case identification procedure based on the PSE with several continuously distributed measures of psychological distress and well-being, ranging from the PSE symptom total to measures of anxiety, depression and self-esteem.

Interpretation of the stress buffering literature is bedevilled by wide variations in statistical analysis.   Differences between the analysis of discrete variables in contingency tables (Brown & Harris, 1978) and of continuous variables via parametric procedures such as multiple regression analysis (Turner & Noh, 1983) relate to the controversy concerning conceptualization of psychological disorder in terms of caseness versus continuum (Wing et al., 1981)..

Furthermore, serious difficulties exist because of differences between authors in their grounds for establishing the presence of buffering. Some authors infer support for the buffering hypothesis from data suggesting a combined effect of lack of support and life stress greater than the sum of their separate effects (Brown & Harris, 1978), whilst others require that the combined effect exceeds the product of their separate effects (Aneshensel & Stone, 1982; Costello, 1982).   Thus, Brown and Harris (1978) inferred buffering from their finding that 32% of unsupported and 10% of supported women evidenced disorder having suffered a severely threatening life event, whilst only 3% of unsupported and 1% of supported women evidenced disorder in the absence of such an event.   Tennant and Bebbington (1978) concluded that there was no buffering effect in their reanalysis of these data, fitting a

log linear model which requires that the ratio of the proportions of cases in stressful vs non-stressful circumstances be greater in unsupported than supported groups before buffering can be inferred (Everitt & Smith, 1979). Costello (1982) also reports data which provide evidence of a stress buffering effect of support when an additive model is used (see note 1), but where the interaction between stress and support was not significant in the multiplicative model (in this case log linear) applied by the author.

This issue is but an instance of a general problem within epidemiology: should interaction (or 'synergy') between two risk factors be evaluated with reference to an additive or multiplicative model of their independent effects (Rothman, 1976; Walter & Holford, 1980; Kupper & Hogan, 1978; Saracci, 1980; Mantel, 1981)? Rothman (1976; 1978) argues that an additive model is the most appropriate in evaluating risk factors in epidemiology, and that other models use arbitrary transformations which can mask the presence of interaction. This view has been debated by Walter and Holford (1980), and further discussed by a number of epidemiologists (see Kupper & Hogan, 1980). Gardner and Munford (1980) point out, the usual public health and epidemiological concept is that anything greater than additive risks represents a synergism, where joint exposure to two or more factors would result in greater number of cases of disease than the sum of the two separate factors. This is a substantive conceptual issue for a given field, rather than a matter to be resolved by the selection of a statistically 'correct' model. Cleary and Kessler (1982) conclude that:

"There is no way to determine empirically which of the two
formulations ... more accurately describes the causal processes at
work in observed data.   Arguments independent of the data must be
marshalled in defense of one formulation over the other." (page
165)

In the absence of consensus concerning this issue, we report analyses
based upon both additive and multiplicative models.

An additional statistical question concerns adequate testing of
independent effects.   We concur with Thoits (1983) in giving priority
to main effects over interaction terms in an hierarchical analysis,
whether this take the form of logistic analysis of contingency tables
or multiple regression analysis of continuous variates.   Parsimony
requires that a stress buffering effect be inferred only when this is
over and above any main effect of social support irrespective of life
event stress.

An endemic problem in cross-sectional studies is the potential
confounding among measures of life events, social support and disorder
(Dean & Lin, 1977; Thoits, 1982).   Life event stress and social
support levels are not independent of each other.   In particular, low
levels of support tend to be accompanied by high levels of stress and
by adopting a rating procedure for life events which is sensitive to
social context, the problem could be exacerbated.   In an unselected
sample, well supported individuals suffering high levels of threat or
unsupported people with little life event stress will be relatively

less common.   Although random samples are often essential (for example

in epidemiological studies of prevalence) for purposes of model

testing, we believe it unhelpful if all reported findings are on the

interaction between two correlated variables.   In order to reduce the

association between events and support which is found in random

samples, we used a form of quota sampling weighted in favour of the

least prevalent combinatons of these two variables.   This gives

approximately equal numbers of women with and without a severely

threatening life event and with high and low instrumental support in a

2 x 2 design.   To reduce the confounding of social support with prior

disorder, additional analyses eliminated chronic cases from the

examination of psychiatric caseness.

8.2 Method

The sample consisted of 193 working-class women with young children,

selected from a larger sample of 812 women.   Socio-economic status was

assessed using the Registrar General's classification, in respect of a

woman's own job (where employed) or her husband's present or, if

unemployed, most recent job, whichever was the higher.   On these

criteria, all women were in socio-economic groups relating to skilled,

semi-skilled or unskilled manual occupations.   Respondents were

contacted via statutory registers of births held at local child welfare

clinics.   Interviews were conducted by trained social science

graduates in the women's own homes.   A progressive screening procedure

was utilised in order to ensure that the sample would include

approximately equal numbers of women with each combination of life

event threat level (high/low) and instrumental social support level (high/low).

Names and addresses of 812 women who had given birth to a child between four and seven years previously were obtained. A letter to the woman was followed by up to three visits to her home until contact was made. Of these women, 102 were never contacted due to inaccurate information or non response, 169 had moved away from the area, 298 were ineligible for the study because they did not meet the screening criteria. Of the 243 women suitable for interview, 33 (14%) declined to participate and a further 17 (7%) began but did not complete the interview process.

The final sample had a mean age of 30 (range 21-40); 89% of the respondents were married or cohabiting, 11% were single parents. 16% had one child, 53% had two children and 31% had three or more children. 60%, 17% and 24% of the mothers were in skilled manual, semi-skilled manual and unskilled manual socioeconomic groups respectively. (These figures reflect the socio-economic breakdown of the city itself, where the comparable proportions are 66%, 19% and 15% respectively). 70% of the women's husbands were in full-time employment, 14% in short-time employment and 16% were unemployed. Full details of the screening procedure and sample characteristics can be found in Parry, 1986).

Measurement of life event threat and social support

Life event threat.   The London Life Events and Difficulties Schedule was used (LEDS; Brown & Harris, 1978).   The previous twelve months'

life events were elicited using this structured interview, a brief account of each event written out (from the audiotape of the interview) and later rated on 'long term threat' by three independent raters who had available the LEDS dictionary of events used to provide anchor points for each level of rating. The degree of threat is judged from the perspective at the end of the first week following the occurrence of the event and according to the context in which the event occurred but independently of the woman's affective reaction or mental state. Raters met to reach a consensus. Interrater reliability was good, with overall agreement of .81 using Kendall's coefficient (Parry et al., 1981). Threat is rated on a four point scale, a score of 1 representing marked threat; 2, moderate threat; 3, some threat; 3, little or no threat. Each event is also rated for its focus, whether on the subject herself or on another person. Following Brown and Harris (1978), a woman was assigned to the 'severe life event' category if she had suffered an event given the rating of marked long term threat (any focus), or moderate long term threat when the event was focussed on the subject herself (p.309).

In addition to this categorisation and in order to permit the use of multiple regression techniques in addition to categorical data analysis, a continuously distributed variable was derived from the long term threat scores for the previous twelve months' events. This was done by reversing the threat scale, so that an event at the highest level of threat scored 4, and at the lowest 1. These scores were summed, giving an index of life event stress for the preceding year which is a function of the number of events and their severity.

<u>Chronic social difficulties</u> were also measured using this schedule.
In the present analysis, the presence of financial and housing
difficulties were used as background predictors in multiple regression,
irrespective of severity.

<u>Instrumental social support</u> (ISS) was measured during interview by
asking about available practical help and membership of community
groups. This was distinguished from expressive social support which
concerns the availability and use of close confiding relationships (see
below). The availability of two levels of financial help in a crisis,
and of help with child care, both routinely and in a crisis, was
assessed by four items each scored 'yes' (two points), 'no' (zero
points) and 'not certain' (one point). Contact with local medical
resources, membership of religious groups and membership of other
community associations (such as mother-and-toddler groups or social
clubs) were assessed by specific questions assigned a possible maximum
of five points for each domain. In order to implement the screening
procedure, after the first 50 women were interviewed, their summed
scores were calculated, and those above and below the median were
designated 'high' and 'low' ISS respectively. Instrumental support
was analysed both in terms of a continuous distribution and as a binary
variable.

<u>Expressive social support</u> (ESS). Women were, after interviewing was
complete, assigned to a 'high', 'medium' or 'low' expressive support
category on the basis of (a) the total number of social contacts, (b)
the proportion of time spent during the last seven days before

interview with confidants, (c) the number of confidants, and (d) whether there was evidence (on the LEDS) of marital disharmony other than self-reported dissatisfaction. It was decided that ratings of expressive support were best made by within-sample comparison rather than by reference to external norms. For this reason, the criteria were derived from consensual rating of 15 protocols taken at random, and were thus adjusted to this particular sample. These were as follows:

High ESS: Three confidants split between husband, family and non-family, no evidence of marital disruption, more than twelve people on the social contacts list and contact with confidants in the previous seven days.

Low ESS: No or only one confidant, and, in addition, fewer than five people on the social contacts list and evidence of social isolation on the seven day time log.

Medium ESS: All other respondents were rated 'medium'.

The final distribution of respondents in the high:medium:low categories was 49:98:41 respectively. Three raters independently assessed protocols; inter-rater reliability using Kendall's coefficient of concordance was .81 between pairs and .75 overall.

Intimacy. In addition to the expressive support measure described above, women were also assigned to a level of 'intimacy' as described by Brown and Harris (1978, p174) in order to permit replication of their analyses. In accordance with this method, women who spontaneously reported their husband or boyfriend as confidant were

assigned to the 'high intimacy' category, with three exceptions; where this answer was clearly contradicted by other information about the marriage given in the interview, where subsequent information made it unambiguously clear that the partner was indeed a confidant, and, rarely, when a relationship with another woman had the characteristics of a marital tie. Those who lacked a confiding relationship of this kind were rated 'low' on intimacy. The 'intimacy' measure of Brown and Harris is different from the expressive support measure in a number of respects. In particular, it would be possible for a woman to have her husband as a confidant and yet to be rated 'low ESS' if he were the sole confidant, there was a marital difficulty, and the account of the previous seven days showed social isolation. Even in the absence of a marital difficulty and social isolation, a woman with only her husband as a confidant would be assigned to the 'medium ESS' group.

Dependent variables

Psychiatric morbidity was assessed using the standardized case identification procedure described by Wing, Cooper and Sartorius (1974). The 9th edition of the Present State Examination (PSE) was designed for use as a screening measure in general populations and establishes through interview the degree to which each symptom is present (Wing, 1980). Cases were identified in two ways. First, by using the PSE profiles and the CATEGO-ID system (Wing et al., 1978), each respondent was assigned to one of eight levels of increasing severity of psychiatric disorder, known as Index of Definition (ID) levels (Wing & Sturt, 1978). The threshold at which a person is

identified as a 'case' is typically ID level 5, and at this level and above a provisional diagnosis can also be made. 20% of the present sample were 'threshold cases' at ID5 or above, and 4% were 'definite cases' (level 6 or above). By far the most common diagnosis was neurotic depression (65% of threshold cases) with anxiety state the next most common (22% of threshold cases).

A second case identification procedure was used in order to replicate as far as possible Brown and Harris's (1978 p34,56) definition of 'onset depression'. PSE profiles were analysed in terms of the algorithm adopted by Brown's group, and chronic cases were excluded. This requires, in terms of PSE symptoms, that depressed mood be rated, together with any four of the following symptoms; hopelessness, suicidal plans, weight loss, delayed sleep, early waking, concentration loss, brooding, loss of interest, self depreciation or retardation. In practice, this method adopts a threshold between ID5 and ID6 as the case criterion.

Psychological distress was measured using a range of questionnaire methods. The Beck Depression Inventory (Beck et al., 1961) is a 21 item measure of the behavioural manifestations of depression, irrespective of clinical diagnosis. It has been widely used in research. A short form of the Zung Self-rating Depression Scale (Zung, 1965) was derived which consisted of six items from this measure with high item-whole correlations in a previous studies with a comparable sample (Warr & Parry, 1982b). The short form thus derived taps affective and psychological disturbance rather than physiological and

psychomotor items, and was found to be valid and reliable. The somatic

anxiety scale of the Multi-component Anxiety Scale (Schalling, 1975)

was also used to give a brief measure of anxiety-related physiological

arousal and to provide, with the short Zung scale, discriminant indices

of depression and anxiety. Bradburn's five item measure of negative

affect (Bradburn, 1969) was also used to assess aspects of

psychological distress. The total number of symptoms found using the

PSE were summed to give a continuous measure of psychiatric distress in

addition to the case criterion described above. A measure of positive

affect (Bradburn, 1969) was also used to tap psychological well-being

directly. Rosenberg's measure of self esteem was also used (1965).

There is considerable evidence that this scale reflects two independent

aspects of self esteem tapped by the positively and the negatively

worded items respectively (Zeller & Carmines, 1980; Warr & Jackson,

1984). Because of this, positive and negative Rosenberg items were

summed and analysed separately to give positive and negative self

esteem scales.

Analyses

For each of the three measures of social support (instrumental support,

expressive support and intimacy) the proportion of psychiatric cases

and onset depression cases were tabulated by life event category and

level of social support. The resulting six contingency tables were

analysed in two ways. First, a multiplicative definition of no

interaction was adopted, and as the dependent variable is binary

(cases/cell count) logistic regression was applied. The General Linear Interactive Modelling program was used specifying a logistic link function with binomial errors. In addition, an additive definition of no interaction was used. A program was written to implement the algorithm given by Gokhale and Kullback (1978) for this purpose.

In addition to the models fitted to the contingency tables, the continuously distributed variables were analysed by multiple regression technique. The REGRESSION subprogram of SPSS (Nie et al, 1975) was used with hierarchical inclusion. Such an analysis invokes a multiplicative definition of no interaction. Regression analyses were conducted for each of the dependent variables, namely PSE total, Beck, Zung, somatic anxiety, positive affect, positive self esteem and negative self esteem.

The nature of these measures led inevitably to a skewed distribution of subjects' scores, this departure from normality being particularly marked for the PSE total and the Beck Depression Inventory. Analyses were therefore performed using a log transformation of these two scales. The transformation gave a more random distribution of errors, but only trivial differences in the results obtained. For the sake of clarity, the results from the untransformed scales are therefore presented.

For each dependent variable, separate regression equations included ISS and ESS as the social support predictor. In each case, the other

predictors were long term threat and the interaction between threat and social support. The interaction term was derived by centering each variable on its mean (i.e. subtracting the mean from each score) before obtaining the product term in order to reduce collinearity between main effects and the interaction term. Five demographic variables were also used as predictors: number of children, financial difficulty, housing difficulty, age and marital status.

All analyses specified the order of entry of variables into the equation via hierarchical inclusion. For each dependent variable in turn, a series of analyses was run specifying the several different orders of inclusion required to ascertain the independent effects of each of the following variables: social support, long term threat, the interaction between social support and long term threat, and the set of five demographic background predictors. Thus R^2 change values were obtained for each of these variables to assess their contribution to the variance accounted for by the complete equation.

8.3 Results

Life events, support and psychiatric caseness

The analyses of categorical variables (psychiatric cases in each life event and support group) are first reported for each form of social support separately, followed by the analysis of continuously distributed psychological distress variables.

Instrumental support

Figure 8.1 shows the breakdown of all psychiatric cases by severe life event and instrumental support. The proportion of cases in each group were as follows: 1) severe threat and low support, 40% (18/45); 2) severe threat and high support, 3) 21% (6/29); no severe threat and low support, 16% (10/61); 4) no severe threat and high support, 9% (5/58). A logistic regression analysis revealed significant main effects of both life event (chi^2=9.8, 1df, p$<$.01) and support (chi^2=4.77, 1df, p$<$.05), with a chi^2 for their combined effects of 15.55 (2df, p$<$.001). These analyses are shown in Table 8.1. The independent effects model gave an extremely good fit, with tiny residual values. The additive definition of no interaction also supported the independent effects model, with no standardized residual value greater than 0.6.

When this analysis was repeated with the dependent variable defined by the criterion of onset depression cases only (Figure 8.2) the proportions of cases in groups 1-4 above were 22% (10/45), 7% (2/29), 8% (5/61) and 5% (3/58) respectively. The effects of a severe life event and of instrumental support were reduced considerably (event: chi^2=4.29, p$<$.05; support: chi^2=3.83, p$<$.06). These analyses are shown in Table 8.2. The independent effects model gave the best fit for onset cases of depression, as there were statistically insignificant values of chi^2 for the interaction term using both the multiplicative and additive definitions of no interaction.

FIGURE 8.1
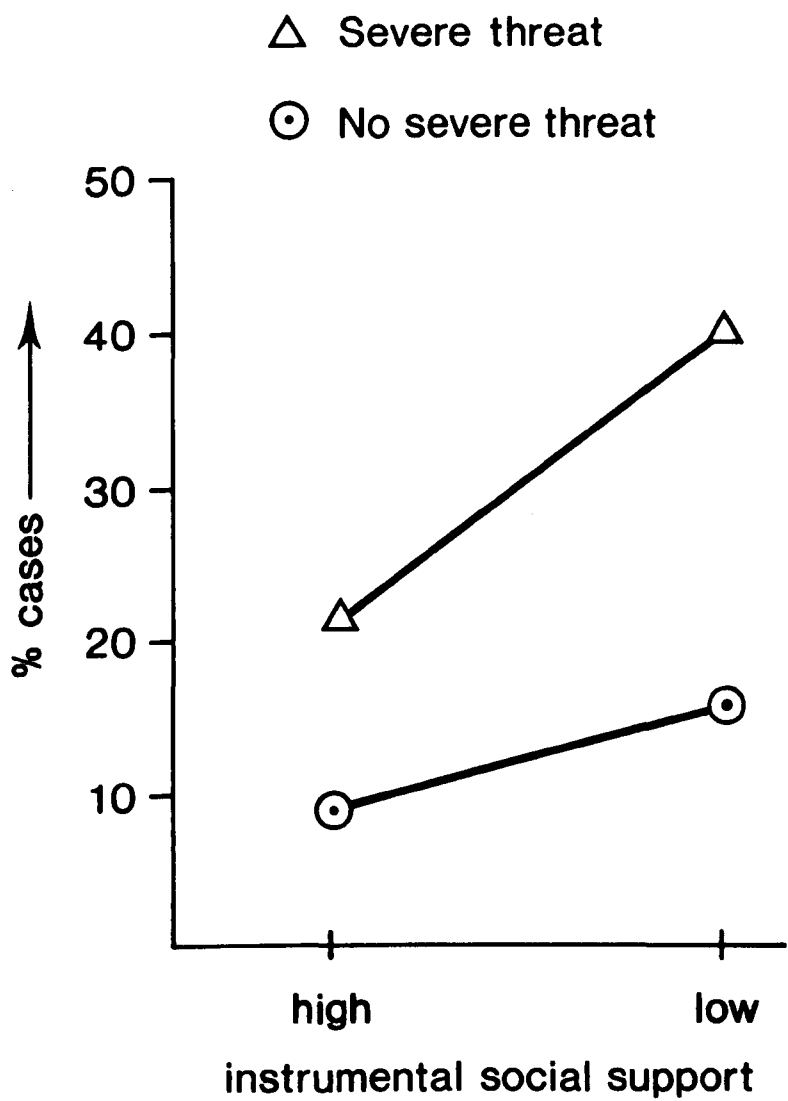
All cases by severe life event and instrumental social support.

TABLE 8.1

All cases (ID $\geqslant$ 5) by severe life event and instrumental social support

With severe event		No severe event	
low ISS	high ISS	low ISS	high ISS
18/45	6/29	10/61	5/58
40%	21%	16%	9%

Logistic regression

	chi^2	df	
Grand Mean	15.62	3	
Major life event	9.80	1	$p < .01$
Instrumental support	4.77	1	$p < .05$
Event + support	15.55	2	$p < .001$
Interaction	0.07	1	n.s.

Using additive definition of no interaction

	chi^2	df	
Interaction	0.805	1	n.s.

Residual values

fitted values	standardised residuals (additive model)	fitted values	standardised residuals (multiplicative model)
16.27	0.54	17.68	0.09
7.30	-0.55	6.32	-0.15
11.05	-0.35	10.32	-0.11
4.49	0.25	4.68	0.16

FIGURE 8.2

△ Severe threat

⊙ No severe threat
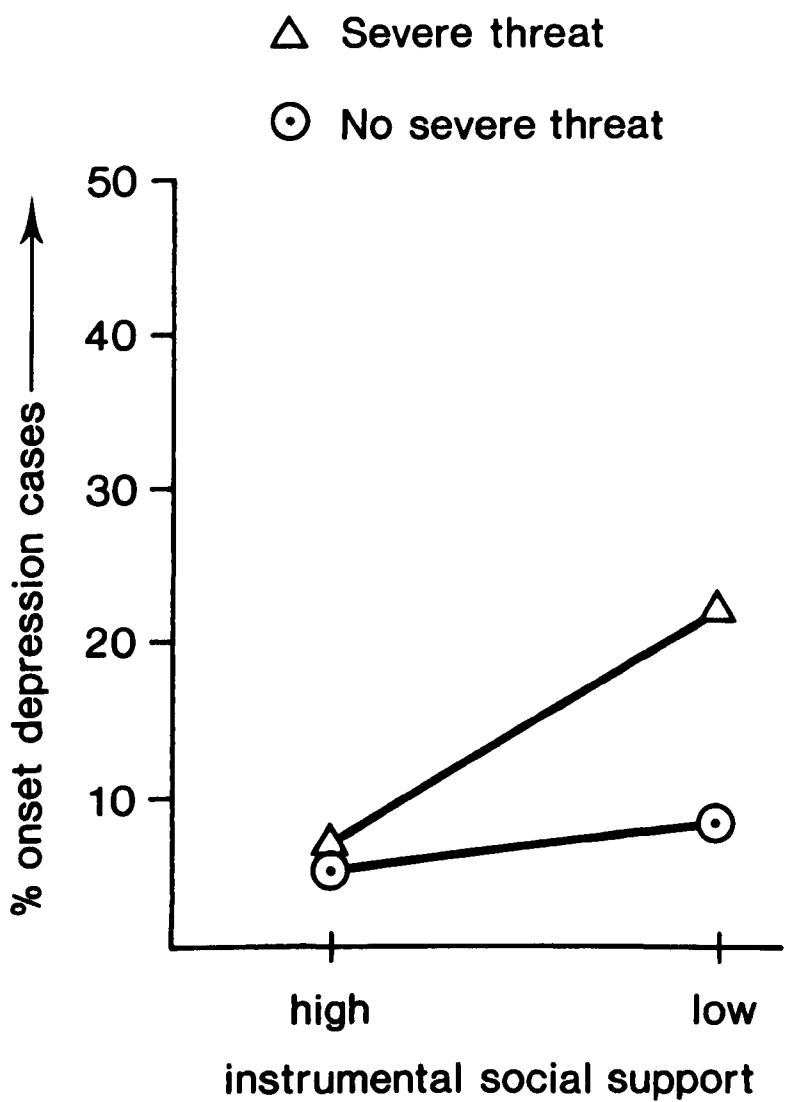
Onset cases of depression by severe life event and instrumental social support.

TABLE 8.2

Onset cases of depression (Brown's definition)
- proportion by severe event and instrumental social support

Severe life event		No severe event	
low ISS	high ISS	low ISS	high ISS
10/45	2/29	5/61	3/58
22%	7%	8%	5%

Logistic regression

	chi^2	df	
Grand Mean	8.09	3	
Major life event	4.29	1	$p<.05$
Instrumental support	3.83	1	$p<.06$
Event + support	7.49	2	$p<.05$
Interaction	0.61	1	n.s.

Using additive definition of no interaction

	chi^2	df	
Interaction	1.828	1	n.s.

Residual values

fitted values	standardised residuals	fitted values	standardised residuals
(additive model)		(multiplicative model)	
7.69	0.91	9.29	0.26
3.17	-0.70	2.71	-0.45
6.22	-0.52	5.71	-0.31
2.36	0.43	2.28	0.48

Expressive support

The breakdown of the proportion of all cases by life event and expressive social support was as follows: 1) severe threat and low support, 55% (11/20); 2) severe threat and medium support, 30% (11/37); severe threat and high support, 12% (2/17); 4) no severe threat and low support, 29% (6/21); 5) no severe threat and medium support, 8% (5/65); 6) no severe threat and high support, 12% (4/33). Figure 8.3 shows that the effect of a severe life event was stronger in the low and in particular the medium ESS groups. Although this interaction failed to reach significance when a multiplicative definition of no interaction was used (chi^2=2.43, 2df, p<.30), when applying the additive model, the interaction was significant beyond the 2% level (chi^2=8.96, 2df). These analyses are shown in Table 8.3. There was no effect of a severe event in the group with high expressive support, and a strong effect of such an event in the group with medium levels of support.

Repeating these analyses for onset depression cases yielded the following proportions for groups 1-6 above (figure 8.4): 20% (4/20),19% (7/37), 6% (1/17), 19% (4/21), 3% (2/65) and 6% (2/33). The effect of expressive social support was reduced in this analysis, failing to reach significance for either model. Although in the logistic regression analysis the effect of the interaction term was strengthened slightly, it was still not statistically significant. The previously significant interaction using the additive definition was considerably weaker and not significant at the 5% level. The previous pattern of there being no effect of a severe event in the highly supported group

FIGURE 8.3
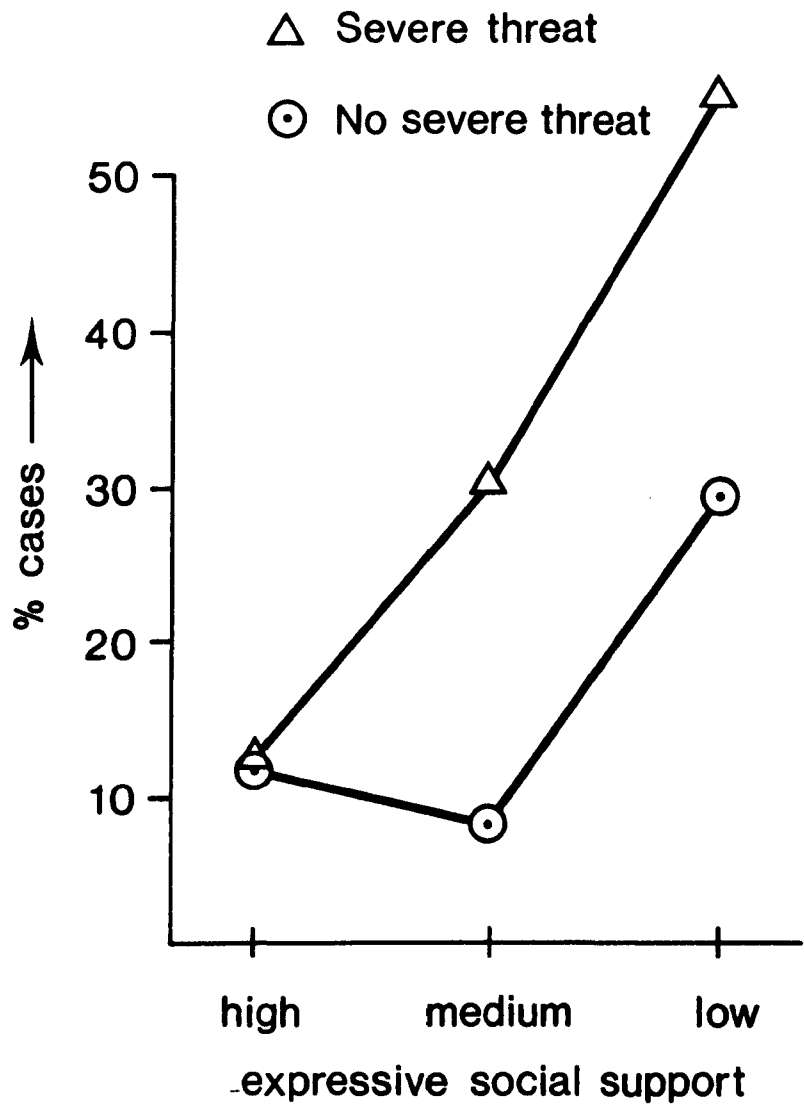
All cases by severe life event and expressive social support.

TABLE 8.3

All cases (ID $\geqslant$ 5) by severe life event and expressive social support.

With severe event			No severe event		
lo ESS	med ESS	hi ESS	lo ESS	med ESS	hi ESS
11/20	11/37	2/17	6/21	5/65	4/33
55%	30%	12%	29%	8%	12%

Logistic regression

	chi^2	df	
Grand Mean	24.63	5	
Major event	8.89	1	p<.005
Expressive support	11.35	2	p<.005
Event+support	22.20	3	p<.001
Interaction	2.43	2	n.s., p<.30

Additive definition of no interaction

	chi^2	df	
Interaction	8.96	2	p<.02

Residual values

fitted values (additive model)	standardised residuals	fitted values (multiplicative model)	standardised residuals
7.36	1.69	11.03	-0.01
6.86	1.75	9.49	0.56
3.01	-0.64	3.47	-0.88
9.39	-1.49	5.97	0.02
6.89	-0.76	6.51	-0.62
3.21	0.46	2.52	0.97

FIGURE 8.4
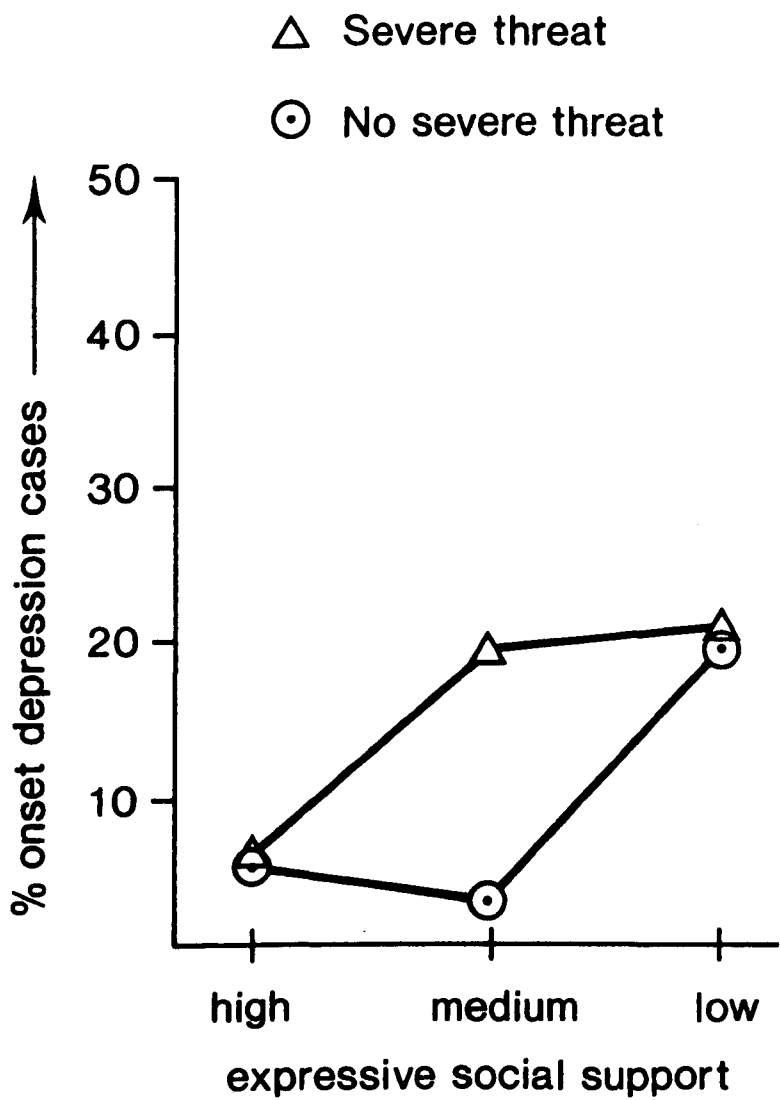
Onset cases of depression by severe life event and expressive social support.

TABLE 8.4

Onset cases of depression (Brown's definition) –
proportion by severe life event and expressive social support.

	With severe event				No severe event		
	lo ESS	med ESS	hi ESS		lo ESS	med ESS	hi ESS
	4/20	7/37	1/17		4/21	2/65	2/33
	20%	19%	6%		19%	3%	6%

Logistic regression

	chi^2	df	
Grand Mean	11.61	5	
Major event	4.28	1	p<.05
Expressive support	4.48	2	n.s.,p<.20
Event+support	7.91	3	p<.05
Interaction	3.70	2	n.s.,p<.20

Additive definition of no interaction

	chi^2	df	
Interaction	3.16	2	n.s.,p<.30

Residual values

fitted values (additive model)	standardised residuals	fitted values	standardised residuals (multiplicative model)
3.14	0.53	5.31	-0.66
4.49	1.26	5.06	0.93
2.06	-0.79	1.63	-0.52
4.99	-0.51	2.69	0.85
2.66	-0.42	3.94	-1.01
1.36	0.56	1.37	0.55

remained when onset depression cases were examined. These analyses are shown in Table 8.4.

Intimacy

Replicating as closely as possible Brown and Harris's (1978, p.177) analysis of onset depression cases by intimacy and life event category (Figure 8.5), the following proportions of cases were found: 1) severe event (or major difficulty) and no intimacy, 31% (8/26); 2) severe event and intimacy, 10% (5/49); 3) No severe event and no intimacy, 10% (2/19); 4) no severe event and intimacy, 5% (5/98). It was found that using both definitions of no interaction, the interaction term (life event x intimacy) was not significant, although in both analyses, the number of cases in the most vulnerable cell slightly exceeded the prediction from independent effects. These analyses are shown in Table 8.5.

Indices of psychological distress

The results of the multiple regression analysis are shown in Tables 8.6 and 8.7. Table 8.6 contains the R^2 and adjusted R^2 values indicating the percentage of variance in each dependent variable accounted for by the full regression equation. Aside from the particularly weak prediction of the positive self esteem measure, these data indicate a fairly consistent prediction of some 10 to 15 per cent of the variance.

FIGURE 8.5

△ Severe threat or difficulty

⊙ No severe threat or difficulty
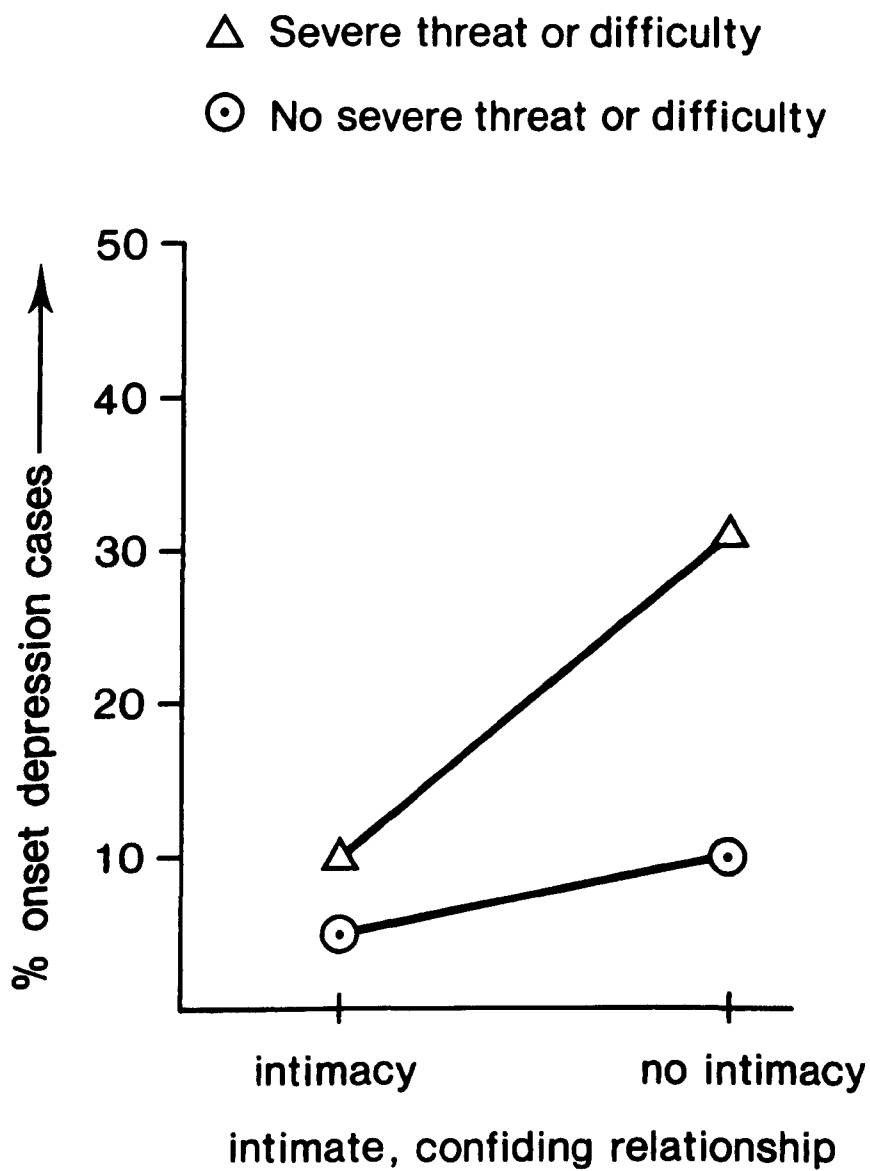
Onset cases of depression by severe life event (or major difficulty) and intimacy.

TABLE 8.5

Onset cases of depression (Brown's definition)
proportion by severe event (or major difficulty) and intimacy.

Severe event		No severe event	
No intimacy	Intimacy	No intimacy	Intimacy
8/26	5/49	2/19	5/98
31%	10%	10%	5%

Logistic regression

	chi^2	df	
Grand Mean	11.64	3	
Provoking agent	6.14	1	$p < .02$
Intimacy	7.58	1	$p < .01$
Provoking agent + intimacy	11.34	2	$p < .001$
Interaction	0.30	1	n.s.

Using additive definition of no interaction

	chi^2	df	
Interaction	1.44	1	n.s.

Residual values

fitted values (additive model)	standardised residuals	fitted values (multiplicative model)	standardised residuals
6.14	0.86	7.48	0.22
5.93	−0.41	5.52	−0.23
3.07	−0.67	2.52	−0.35
4.56	0.21	4.48	0.25

TABLE 8.6

Multiple regression analysis:
variance accounted for by full equation

	PSE	Beck	Zung	Anx	Posaff	Negaff	Rosenp	Rosenn
				Dependent measure				

Dependent measure

	PSE	Beck	Zung	Anx	Posaff	Negaff	Rosenp	Rosenn
				ISS analysis				
R^2	.17	.12	.16	.12	.11	.16	.04	.12
adj R^2	.13	.08	.12	.08	.07	.13	.00	.08
				ESS analysis				
R^2	.16	.16	.23	.12	.12	.20	.06	.18
adj R^2	.12	.12	.20	.08	.08	.17	.02	.14

TABLE 8.7

Multiple regression analysis.
Standardised regression coefficients obtained
when including five background predictors

			Dependent measure					
predictor	PSE	Beck	Zung	Anx	Posaff	Negaff	Rosenp	Rosenn
ISS								
beta	-.193"	-.178'	-.233*	-.189'	.209"	-.216"	.175'	.174'
R^2 change	.039	.029	.057	.038	.044	.044	.029	.031
Threat								
beta	.251"	.082	.178'	.158	.052	.236"	-.021	-.074
R^2 change	.059	.006	.035	.027	.008	.047	.001	.007
Interaction								
beta	-.089	-.006	-.122	-.103	.082	-.029	.034	.080
R^2 change	.007	.000	.014	.010	.006	.001	.001	.006
ESS								
beta	-.194"	-.268*	-.400*	-.242"	.264*	-.298*	.232"	.320*
R^2 change	.033	.063	.140	.051	.061	.077	.047	.089
Threat								
beta	.276*	.097	.207"	.183'	.040	.258"	-.014	-.094
R^2 change	.058	.006	.031	.025	.001	.044	.000	.006
Interaction								
beta	.027	.093	.041	.024	.013	.102	.042	-.038
R^2 change	.001	.007	.001	.000	.000	.008	.001	.001

* $p < .001$

" $p < .01$

' $p < .05$

Notes

1. All standardised regression coefficients (betas) obtained with all variables in the equation.

2. R^2 change for main effects obtained with background predictors and other main effect in the equation.

3. R^2 change for interaction obtained with all variables in the equation.

For all regression analyses, the impact of including the interaction term upon the independent effects of long term threat and social support was minimal. In only 1 of 64 cases was a standardised regression coefficient changed by more than .04, and in only a further three was the change greater than .03. Table 8.7 shows the results obtained in 16 analyses including the five demographic variables (number of children, financial difficulty, housing difficulty, age and marital status). Closely similar results were obtained when these background predictors were omitted. The findings of all analyses were consistent in showing no significant interaction effect. The interaction term independently accounted for less than 1% of the variance in every analysis, as indicated by the increment in the multiple regression coefficient (R^2 change) associated with its introduction into the equation after all other variables.

In contrast, the social support predictors were invariably significant, accounting for some 3% to 14% (median 5%) of the variance, after controlling for the background predictors and life event threat, the associaton with ESS being generally somewhat larger than that of ISS. The variable of life event threat accounted for from 0% to 6% (median 1%) of the variance, after controlling for the background predictors and social support, and was significant for all analyses of PSE, Zung and negative affect; threat was also significant in some analyses of anxiety and Beck. These findings indicate that both forms of social support act independently of life event adversity in their impact upon symptoms and well-being; comparison among the data in Table 2 suggests that the impact of social support, whether instrumental or expressive,

was somewhat stronger than that of the summed threat scores for the previous year, except in the case of the PSE total score. The relatively strong effects of ESS on the questionnaire measures may reflect contamination, or a specific relationship between dysphoric mood and the lack of expressive social supports.

8.4 Discussion

The balance of evidence in this study supports the view that life event threat and social support each have a significant but modest independent effect on psychological distress. We have found a striking absence of significant interaction effects once the main effects of event threat and support have been taken into account, particularly for multiple regression analyses of continuously distributed variables and for logistic analyses of contingency tables with onset depression cases as the dependent variable. Both of these use multiplicative models of the nature of epidemiologic interaction.

Adopting the criteria of ID5 threshold cases and an additive model of interaction did yield a significant interaction between major life event and expressive social support (see figure 8.8). In this analysis, there was no effect of life event threat in the highly supported group, whereas for less well-supported woman, there were significantly more cases in the major life event threat group. This result is entirely consistent with the stress buffering model, but was the only one which was unequivocally in support of it.

It is informative to compare the results in figure 8.7 with the equivalent data from Brown and Harris (1978, p177). They found 32% of unsupported and 10% of supported women to be cases having suffered a severe event, but only 3% of supported and 1% of unsupported women in the absence of such an event. The equivalent percentages in the present study were 31%, 10%, 10% and 5%. The overall case rate in the present study was therefore higher at 10.88% rather than 8.83% This could reflect more stringent exclusion of chronic cases by Brown's group, who attempted to date onset of disorder very carefully, to within a week where possible. Whether or not this is so, the general proportion of cases in each cell are strikingly similar to the Brown and Harris (1978) figures, and typical of the data base of studies replicating Brown's methodology (Brown & Harris, 1985). Where the total N is large enough, this pattern does yield significant interactions using an additive model, although not with logistic analyses. In the present case, however, the overall sample size was not sufficient for the interaction term to be statistically significant on the additive model.

An independent effect of both expressive and instrumental support was found using continuously distributed indices of psychological distress and well-being as dependent variables. This was also the case in contingency table analyses of all psychiatric cases. However, the effect of the support variables was reduced considerably when the Brown and Harris's method was adopted which had a higher threshold and excluded chronic cases. This either demonstrates that social support is of less importance in acute and relatively severe depressive

disorders, or perhaps that the social support measures are tapping aspects of strain and low mood state. The expressive support measure was particularly affected by adopting the Brown criterion. This could indicate a weaker relationship between expressive support and more serious distress or contamination of the support measure by dysphoric mood. Brown and Harris's criterion of 'intimacy', however, retained a significant effect for onset depression cases. It would be difficult to argue that this measure, a self report of confiding, is less contaminated than the expressive support measure, which used a seven day time log and independent judges, and this would imply that the results for ESS were not entirely due to overlap between the independent and dependent variable. A more substantive explanation is possible, and this is favoured by Brown and Harris (1981) who found an independent association between lack of intimacy and caseness only when chronic cases were included. They argue that "low intimacy and other forms of shortcoming in social support can themselves be produced by the chronic depressive condition - obvious examples being a woman's withdrawal from a job and social contacts outside the home consequent upon the self-depreciative and anergic features of the episode itself." As all the analyses in our cross-sectional study are associational, we are not able to resolve this issue empirically in the current study, but we will refer below to other studies which address this possibility.

As different estimates of the interaction term (including one which was highly significant) were obtained from different statistical analyses of the same data base, these results demonstrate clearly that the result obtained will depend upon the way in which 'support' is defined,

the form of the dependent variable, and the model of interaction adopted. That such differences have been found within one study gives weight to the view that the interpretation of differences between studies should be undertaken with extreme caution, bearing in mind that differences in method and analysis could account for them. This problem cannot be resolved easily, if for no other reason than that this field represents an interface between different research traditions. Professional groups with varying aims and interests are working within the same overall paradigm, and there are inevitable differences in the way they conceptualize and operationalize variables. An obvious illustration is where psychiatrists and other clinicians are more concerned with factors predicting the onset of diagnosable conditions equivalent to those seen in hospital settings, whereas other social science researchers, equally legitimately, are seeking to elucidate the pattern of relationships between stress and well-being in the general population. In order to facilitate comparisons between studies, we believe it to be useful, whenever possible, to use both a case identification procedure and continuously distributed distress variables in the same study.

More precise specification of the social support variable is often recommended to enable this field of research to progress. We used a simple distinction, between instrumental and expressive support. The value of including both types of support was demonstrated by the results, where, despite a predictably significant correlation between the two forms of support ($r=.27$, p .001), their degree of association was only moderate, and they behaved differently in data analyses. For

example, expressive support was more strongly associated with all the measures of psychological distress or well being than instrumental support, with the exception of the PSE total score. However, the magnitude of these associations are modest and the differences between them only reach statistical significance in the case of the Zung scale (Hotelling's t=2.10, df=190, p .05). It is therefore not possible to conclude from these data that expressive support is more contributory to psychological well-being.

An implicit assumption in life events research is that a stress buffering model of support is theoretically more interesting or has more practical significance than an independent effects model. We do not share this view. Whichever model more accurately represents the underlying causal process, it remains true that individuals who have suffered a life event and who lack social support are at considerably more risk of developing a psychiatric disorder than their socially supported counterparts. For example, the percentage of onset depression cases in figure 8.7 shows that those in the most vulnerable group are nearly three times more at risk than their supported counterparts, and over four times more at risk than those with support who have not suffered a severe event. Although it does not confirm the hypothesis of a stress buffering mechanism, for public health purposes this type of finding is extremely important, since the removal of only one of these risks (in this case the lack of instrumental support) would result in a 70% reduction of the number of cases in this vulnerable group.

There is also the danger that protracted debate about stress buffering vs independent effects may distract attention of researchers and clinicians from the importance of studying in more detail social support in its own right, rather than as a moderating variable in a life events study. Promising developments in this regard include a more precise typology of socially supportive behaviors (Barrera & Ainley, 1983) and recent research into the properties of social networks (Wellman, 1982; Hirsch, 1981; Gottlieb, 1982).

There was a consistent finding of a significant association between both forms of social support and psychological well being, although in a cross- sectional study it is not possible to infer the direction of cause, particularly between social support deficits and depression. The lack of support may directly influence an individual's well being, but there is also the possibility of a 'depressive social process' whereby members of the depressed person's social environment find his or her depressive behaviour aversive but guilt-arousing (Coyne et al., 1981; Coyne, 1976). Relatives and friends may provide support and reassurance at first, but then reject and avoid the depressed person. This may serve to heighten the individual's insecurity, reducing their available supports and in turn making the onset of further episodes more likely. Henderson and Moran (1983) found, however, little evidence that the onset and remission of symptoms altered the availability or perceived adequacy of social ties, with the exception of more arguments with close ties eight months following the onset of a psychiatric episode.

The modest strength of the association between life event threat and the clinical distress variables should be noted, and although the effect is stronger in the poorly supported groups, there remain poorly supported individuals who despite experiencing major stress, were not distressed at the time of interview. It is of course possible that a number of these had symptoms following the event but have subsequently recovered. Grant and associates (1982), however, using time series analysis in a longitudinal study, found a sizeable subgroup in a male sample to be either unresponsive to threat or showing no coherent response.

If the lack of social support acts analogously to life events in producing stress, and there are some individuals who remain symptom-free despite such adversity, the question of which factors which provide immunity from the effects of stress remains. Epidemiological studies which incorporate individual vulnerability are as yet the exception, and this may be a fruitful area for future research. Here the individual is seen by virtue of their own developmental history to be at greater or lesser risk of developing disorder following exposure to stress. Personal vulnerability can be investigated in a number of different terms, for example, by studying self-concept and processes and self esteem regulation (Davis and Unruh, 1981; Mollon and Parry, 1984), learned helplessness and attributional style (Abramson et al., 1978), or coping mechanisms (Folkman and Lazarus, 1980; Silver and Wortman, 1980; Menaghan, 1983). Whichever personal vulnerability paradigm is adopted, it seems likely that research may move toward a greater understanding of the ways in which socially supportive behaviours have their effects, by taking into account the role of the individual in the stress process.

CHAPTER NINE: COGNITIVE STYLE AND DEPRESSION:

SYMPTOM-RELATED, EVENT-RELATED OR INDEPENDENT PROVOKING FACTOR?

9.1 Introduction

This study addresses the relations between cognitive style, life events and depression. According to recent formulations of learned helplessness theory, individuals with a vulnerable cognitive style (a tendency to make internal, stable and global attributions for failure) are particularly prone to become depressed following stressful life events (Peterson & Seligman, 1984). This model suggests that it is the conjunction of cognitive vulnerability and life events, rather than either factor on its own, which will be associated with the occurrence of a depressive reaction. In contrast, independent research in the field of social psychiatry (e.g., Brown & Harris, 1978) suggests that stressful life events may be associated with the onset of depression in their own right, particularly when they are accompanied by such social factors as caring for several young children at home or having no intimate confiding relationship. According to this model of depression, events themselves lead to onset regardless of a person's cognitive style. The aim of the present study was to investigate whether there is any evidence for the existence of prior cognitive vulnerability in people who have become depressed following a stressful life event.

Evidence for the reformulated learned helplessness theory of depression has recently been reviewed (Brewin, 1985), a task complicated by the fact that there are a number of models of attribution-depression relations.

For instance, there are studies which suggest that cognitions such as self-blame are secondary to the clinical state of depression and do not have any causal influence on the onset or course of the disorder (the 'symptom model'). Brewin concluded that there was an almost complete absence of studies showing that stressful events and cognitive vulnerability in combination were necessary for depression to occur (the vulnerability or diathesis-stress model[*]). Studies which did report that depressed patients made more internal, stable, or global attributions for events than did controls (Cochran & Hammen, 1985; Firth & Brewin, 1982; Gong-Guy & Hammen, 1980; Miller, Klee & Norman, 1982) are open to a number of methodological objections. Among these are (1) they did not rule out the possibility that depressed mood affected attributions rather than the reverse; (2) there was no independent assessment of life events with the result that the stresses were of unknown severity and may have played no part in the onset of the disorder. The findings of both studies that did provide an adequate test of the vulnerability model, albeit not in depressed patients (Cutrona, 1983; Metalsky, Abramson, Seligman, Semmel, & Peterson, 1982; but see also Williams, 1985) suggested that attributional style was directly related to depression in a way that did not depend on an intervening stressful event. Other reviews by Coyne & Gotlib (1983) and Peterson, Villanova & Raps (1985) also conclude that most studies have found depression to be associated with attributions for hypothetical rather than actual events.

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[*] The term 'vulnerability model' describing a cognitive theory should be distinguished from the term used by Brown and Harris (1978).

Low self esteem has also been investigated as an aspect of cognitive style which could increase the risk of depression in the presence of a life event. Brown and Harris (1978) suggested that low self esteem led to a generalisation of hopelessness from the immediate event to other aspects of an individual's life, increasing the risk of depression. More recently, Brown, Andrews, Harris, Adler and Bridge (in press) have found negative self evaluation to precede the onset of depression in those exposed to severe life event threat.

In contrast to the relative dearth of evidence for the role of attributions, the role of stressful life events, particularly severe loss events, in contributing to the onset of depression has been established by a number of independent studies (Brown and Harris, 1978; Dohrenwend and Dohrenwend, 1974; Paykel, Myers, Dinelt, Klerman, Lindenthal & Pepper, 1969; Myers, Lindenthal, & Pepper, 1972; Tennant and Andrews, 1978). It would therefore seem to be important to investigate the role of cognitive vulnerability in conjunction with a proven methodology for identifying life event stress, and to ask whether there is evidence both for vulnerability and severe events among people who are depressed.

The present study differs from most tests of the reformulated learned helplessness theory in a number of ways. First, clinical depression was identified in a community sample of women not receiving psychiatric treatment. This removed the possibility that an association between attributions and depression reflected help-seeking or referral practices rather than the disorder itself. Second, we used a standardised psychiatric interview schedule, the Present State Examination (Wing,

Cooper, & Sartorius, 1974) which can yield a psychiatric case definition or can be used as an overall index of psychiatric symptomatology (Bebbington, Hurry, Tennant, Sturt, & Wing, 1981). By using a reliable case identification procedure the sample can be broken down by whether a person was at a level of depression equivalent to patient samples or not. Third, life events were independently rated for threat according to the methods of Brown & Harris (1978). This increases reliability and reduces contamination by taking account of the circumstances of the event whilst remaining independent of the respondent's psychological reaction to it. The reliability of this procedure is well established (Parry, Shapiro, & Davies, 1981; Tennant, Smith, Bebbington, & Hurry, 1979), and it has the advantage that analyses can be carried out using events known to be severe and of the kind likely to be implicated in depression onset. Finally, other social risk factors were assessed to permit us to estimate the independent effect of life event stress. Chronic social difficulties and social support deficits are known to be associated with increased risk of depression onset and are often confounded with life event stress (Thoits, 1982).

Although not designed specifically to investigate the vulnerability model, our study provided us with a novel way of testing it against other models. Our data included measures of cognitive style (attributions and self-esteem) which we were able to examine in depressed and nondepressed groups of individuals with and without severe life event stress. The various models generate different predictions about which of these groups would show the most adaptive and maladaptive cognitive styles, and the presence of a pre-existing vulnerability may be inferred from certain

patterns of means among the groups. These alternative predictions and their rationale are outlined below:

Vulnerability (diathesis-stress) model: This model suggests that the occurrence of life events in the presence of cognitive vulnerability will tend to produce a depressive reaction, whereas events or vulnerability on their own will be relatively much less depressogenic. In other words, the operation of vulnerability is event-related, and it should not be associated with depression in the absence of an event. From this it follows that, among those suffering from depression, there should be most evidence for pre-existing cognitive vulnerability in individuals who have experienced a stressful event. Lower levels of vulnerability should be evident in both depressed people who have not experienced an event and in the nondepressed. Figure 1 summarizes these predictions about the pattern of means on our measures of cognitive style to be found in the four experimental groups.

Symptom model: This model holds that maladaptive cognitions are merely symptom-related (i.e., they reflect changes in the clinical state of depression rather than pre-existing vulnerability, and do not act synergistically with stressful events). If this is the case our measures of cognitive style should reveal more maladaptive attitudes among the depressed sample than among the nondepressed, regardless of the presence or absence of an event. This predicted pattern of means is also shown in Figure 1.

FIGURE 9.1

Rank orders of means of cognitive style measures in 4 groups of subjects

as predicted by different models of depression.

(1=less adaptive, 2=more adaptive)

	Cases		Non-cases	
	Event	No event	Event	No event
MODEL				
Vulnerability	1	2	2	2
Symptom	1	1	2	2
Mixed aetiology	2	1	2	2

To these may be added a further prediction based on the findings reviewed above:

Mixed aetiology model: A third possible model is that depression can be precipitated either by a severely stressful event or alternatively by pre-existing cognitive vulnerability, both operating as independent provoking factors. In other words, in a depressed sample one would expect a preponderance of stressful life events and more maladaptive cognitive style, but one would not expect typically to find both in the same individuals. In this model, cognitively healthy individuals can become depressed following severe stress. It follows that the greatest evidence for pre-existing cognitive vulnerability should be found among individuals who are depressed despite not having experienced a stressful event (see Figure 1).

9.2 Method

Sample

193 working class women with young children living in Sheffield, UK, were interviewed as part of a study of paid employment and mental health (Parry, 1986; Parry & Shapiro, 1986). Respondents were contacted via statutory registers of births held at local child welfare clinics. Interviews were conducted by trained social science graduates in the women's own homes under the direction of an experienced clinical psychologist.

Socio-economic status was assessed using the Registrar General's Classification, in respect of a woman's own job (where employed) or her husband's present or most recent job, whichever was the higher. On this criterion, only families in skilled, semi-skilled and unskilled manual occupational groups (IIIM, IV and V) were selected for interview.

The final sample had a mean age of 30 (range 21-40); 89% of the respondents were married or cohabiting, 11% were single parents. 16% had one child, 53% had two children and 31% had three or more children. Full details of the screening procedure and sample characteristics are available elsewhere (Parry, 1986; Parry and Shapiro, 1986).

Measures

Life event threat. The London Life Events and Difficulties Schedule was used (LEDS; Brown and Harris, 1978). The previous twelve months' life events were elicited using this structured interview, a brief account of each event written out (from the audiotape of the interview) and later rated on 'long term threat' by three independent raters who had available the LEDS dictionary of events used to provide anchor points for each level of rating. The degree of threat is judged from the perspective at the end of the first week following the occurrence of the event and according to the context in which the event occurred but independently of the woman's affective reaction or mental state. Threat is rated on a four point scale, a score of 1 representing marked threat; 2, moderate threat; 3, some threat; 4, little or no threat. Interrater reliability

was good, with overall agreement of .81 using Kendall's coefficient of concordance (Parry, Davies, & Shapiro, 1981). Each event is also rated for its focus, whether on the subject herself or on another person, and the reliability of these ratings were also satisfactory at .78 using weighted Kappa. After making independent ratings, the raters met to reach a consensus on events where there was disagreement. Following Brown and Harris (1978:309), a woman was assigned to the 'severe life event' category if she had suffered an event given the rating of marked long term threat (any focus), or moderate long term threat when the event was focussed on the subject herself.

In addition to this categorisation, a continuously distributed variable was derived from the long term threat scores for the previous twelve months' events. This was done by reversing the threat scale, so that an event at the highest level of threat scored 4, and at the lowest 1. These scores were summed, giving an index of life event stress for the preceding year which is a function of the number of events and their severity.

Other social risk factors were assessed to permit an estimation of the independent effect of life event stress. Chronic social difficulties relating to health, finance, children, housing, relatives, leisure and work were measured using the LEDS (Brown and Harris, 1978). Social support was assessed in terms of the availability of financial help in a crisis, help with child care, both routinely and in a crisis, contact with local medical resources, membership of religious groups and membership of other community associations (see Parry and Shapiro 1986

for full details of this measure).

Psychiatric morbidity was assessed using the standardized case
identification procedure described by Wing, Cooper and Sartorius (1974).
The 9th edition of the Present State Examination (PSE) was designed for
use as a screening measure in general populations and establishes through
interview the degree to which each symptom is present (Wing, 1980).
Cases were identified by using the PSE profiles and the CATEGO-ID system
(Wing and Sturt, 1978). Each respondent was assigned to one of eight
levels of increasing severity of psychiatric disorder, known as Index of
Definition (ID) levels (Wing, Mann, Leff, & Nixon, 1978). The threshold
at which a person is identified as a 'case' is typically ID level 5, and
at this level and above a provisional diagnosis can also be made. 20%
of the present sample were 'cases' at ID5 or above; 16% at the threshold
level ID 5 and 4% were 'definite cases' (level 6 or above). By far the
most common diagnosis was neurotic depression (26 cases: 66%) with
anxiety disorders the next most common (anxiety state, 9 cases: 23%;
phobic disorder, 3 cases, 8%)

Level of depression was measured using the Beck Depression Inventory
(BDI: Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), a widely-used 21
item measure of the behavioral manifestations of depression, irrespective
of clinical diagnosis.

Cognitive style included measures of attributions and self-esteem.
Attributional style was assessed by Brewin and Shapiro's (1984) scales of
attribution of responsibility for positive and negative outcomes (RPO and

RNO). RPO taps whether in general a person views positive outcomes as occuring because of his or her own effort or because of chance. (Sample item: "It will be largely a matter of luck if I succeed in life.") RNO is concerned with the extent to which a person attributes negative outcomes to internal factors such as his or her character or behavior. (Sample item: "My misfortunes have resulted mainly from the mistakes I've made.") The two scales have been found to be independent and both have demonstrated acceptable reliability and validity. Self esteem was assessed by Rosenberg's (1965) measure. There is considerable evidence that this scale reflects two independent aspects of self esteem tapped by the positively and the negatively worded items respectively (Zeller and Carmines, 1980; Warr and Jackson, 1984). In addition, self-depreciation has been reported as more predictive of depression than a lack of positive self worth (Brown et al, in press). For these reasons, positive and negative Rosenberg items were summed and analysed separately to give two scales: positive self esteem and self-depreciation.

Statistical analyses included product moment correlations, breakdowns of means and standard deviations and analysis of variance using the relevant subprograms of SPSS (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975). Where multivariate analysis of contingency tables was required, the General Linear Interactive Modelling (GLIM) program was used to carry out logistic regression, specifying a logistic link funtion with binomial errors (Baker & Nelder, 1978).

9.3 Results

Life stress, psychiatric morbidity and depression

As expected, the continuously distributed summed life event threat score was significantly associated with the total number of symptoms on the PSE (r=.29, p<.001) and with Beck Depression scores (r=.17, p<.01).

Women who had experienced at least one severely threatening life event were significantly more likely to be at or above the psychiatric case threshold (24/74, 32.43% cases) than those who had not (15/119, 12.6%) (chi²=11.12, p<.01). In order to estimate the independent effect of event stress, the effect of social support was taken into account using logistic regression. Life event stress remained significant after social support was included in the linear model (chi²=9.8, p<.01).

Attributional and self esteem measures

Table 1 shows the product moment correlations of the attributional and self esteem measures with the psychiatric case criterion for depression, BDI scores and each other. Twelve psychiatric cases with a provisional diagnosis of anxiety state or phobic disorder (ICD codes 300.0 and 300.2) were excluded from this and subsequent analyses. Although 8 of these 12 cases were suffering from the PSE symptom 'depressed mood', this was done in order to focus most clearly on the syndrome of depressive disorder. Psychiatric status was associated with both positive and negative self esteem but with neither of the attributional measures. Beck depression

TABLE 9.1

Product moment correlations between attributional and self esteem measures, depression and case criterion (n=181)

	RNO	RPO	Self esteem	Self depreciation
Case	.17$^+$	-.13	-.32$^+$	.45$^+$
BDI	.23$^+$	-.17	-.39*	.56*
RNO	--	.11	-.15	.30*
RPO	--	--	.20$^+$	-.14
Esteem	--	--	--	-.55*

$^+$p<.01

*p<.001

scores were also associated with lower self esteem and more modestly with Responsibility for Negative Outcomes (RNO). Responsibility for Positive Outcomes (RPO) was not associated with either psychological distress measure.

The pattern of intercorrelations between self esteem and attributional style were as expected. There was a strong association between the two aspects of self esteem but not between attributions for positive and negative outcomes. Positive self esteem was associated with taking responsibility for positive outcomes, self depreciation with responsibility for negative outcomes.

Test of the alternative predictions

To examine the alternative predictions made by the vulnerability, symptom and mixed aetiology models, the self esteem and attribution scores for cases and non-cases with and without a severely threatening event were calculated. Table 2 gives means and standard deviations of the four cognitive style measures for each group. Two way analysis of variance was used to examine these means in each case.

Responsibility for Positive Outcomes

The life event status of the respondents did not affect RPO scores, $(F(1,169)=2.31, p=.13)$ but there was a modest effect of psychiatric status, where depressed mothers had lower RPO scores $(F(1,169)=3.95, p=.05)$. The interaction between depression and event status was not significant $(F<1)$.

TABLE 9.2

Means and standard deviations: Self esteem and attributional measures by psychiatric case criterion and severely threatening event

		case		non-case	
		event	no event	event	no event
n		16	11	49	103
RPO		7.75	7.90	8.93	8.37
	(sd)	1.69	2.38	1.97	2.12
RNO		5.87	8.00	6.06	5.37
	(sd)	2.16	2.05	2.22	2.34
Deprec		5.44	7.00	2.75	2.38
	(sd)	3.24	3.16	2.06	2.56
Esteem		7.75	5.18	8.52	8.45
	(sd)	2.14	2.40	1.73	1.71

Responsibility for Negative Outcomes

It was found that depressed mothers had somewhat higher RNO scores than non-depressed $(F(1,169)=4.57, p=.03)$ but that there was no significant main effect of a severe life event. The interaction between severe event and caseness was significant at the 1% level $(F(1,169)=9.76, p=.002)$. Depressed mothers who had not suffered a severely stressful event had the highest RNO scores. Decomposition of this interaction into simple main effects confirmed that the mean score for this group was significantly different from that of the other three subgroups.

Self-depreciation

The depressed mothers had much higher self-depreciation scores than the non-depressed $(F(1,169)=42.32, p<.001)$, irrespective of life event status which had no effect $(F<1)$. The interaction term did not reach statistical significance $(F(1,169)=3.37, p=.07)$, but there was a trend for cases who had not experienced a severe event to show most depreciation.

Self-esteem

Positive self esteem was lower in the depressed groups $(F(1,169)=24.67, p<.001)$ but those who had suffered a severe event did not have significantly lower self-esteem $(F(1,169)=2.86, p=.09)$. In addition, the interaction term was significant at the 1% level $(F(1,169)=10.42, p=.001)$. Depressed mothers who had not experienced a severe event had the lowest self esteem. Simple main effects analysis

showed this group's mean score to be significantly lower than that of other subgroups.

For two of these analyses, the depressed group who had not experienced a severe life event demonstrated the most maladaptive cognitive style, and there was a nonsignificant trend in this direction in a third analysis. To exclude the possibility that this group had higher levels of depression than those mothers above the case threshold with a life event, a parallel analysis was carried out with BDI scores as the dependent variable, but the interaction term was not significant ($F < 1$).

A second possibility was that this group, although not suffering a severely threatening event, had a greater proportion of mothers with chronic life stress in the form of social difficulties. Chronic social difficulties were therefore examined in relation to mental health variables. Taking a 1% level of probability as significant, financial and childcare difficulties were found to be associated with psychiatric symptomatology and BDI scores for the sample as a whole, but depressed mothers with and without a life event had similar levels of these difficulties.

Mothers who had reached psychiatric levels of depression despite not having suffered a severe life event in the previous year were, therefore, particularly likely to demonstrate a negative cognitive style.

Cognitive style and response to life event stress

It remained possible that mothers with a negative cognitive style who had reached the psychiatric case level without having suffered a severely stressful life event were responding to life event stress, but to less severe events. If the high RNO or the low esteem mothers became symptomatic at a lower threshold of life event threat, the cut-off point for a 'severe' event used in the previous analysis could mask an important trend.

This possibility was investigated by examination of the Beck Depression Inventory scores of the sample at different levels of the life event stress variable using a moving average. This is an Exploratory Data Analysis technique (Tukey, 1977) which does not establish statistical significance, but is useful when it is important to investigate the distribution of scores on a variable without making prior assumptions. A 'window' of 40 subjects ($\pm$4) was moved across the distribution, forming nine blocks of subjects. Each successive block overlapped by 10 to 27 subjects. (Subject numbers must fluctuate slightly over the distribution due to differing n's at each level of the stress variable.)

High and low esteem and high and low RNO groups were formed by splitting the sample at the median value for positive self esteem and RNO respectively. When the means of the high and low esteem groups were compared across the distribution (Figure 2) it was found that the low esteem group responded at low stress levels with more marked symptom-atology compared to the high esteem group whose BDI mean scores increased
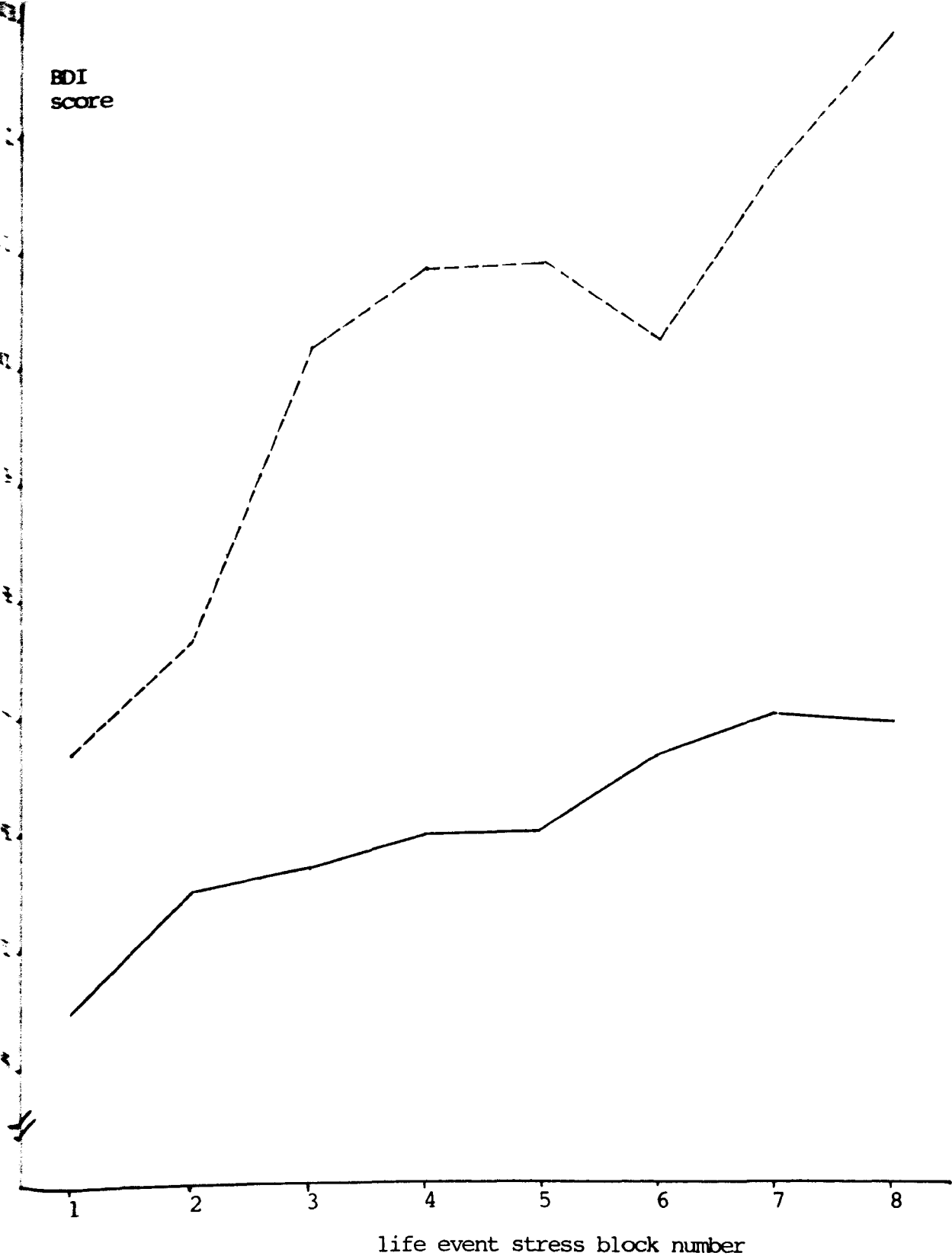
Figure 9.2: Moving average graph, mean Beck Depression Inventory scores for overlapping blocks of respondents at increasing levels of life event stress: Low self-esteem group (broken line) and high self-esteem group (solid line)

FIGURE 9.3

BDI
Score
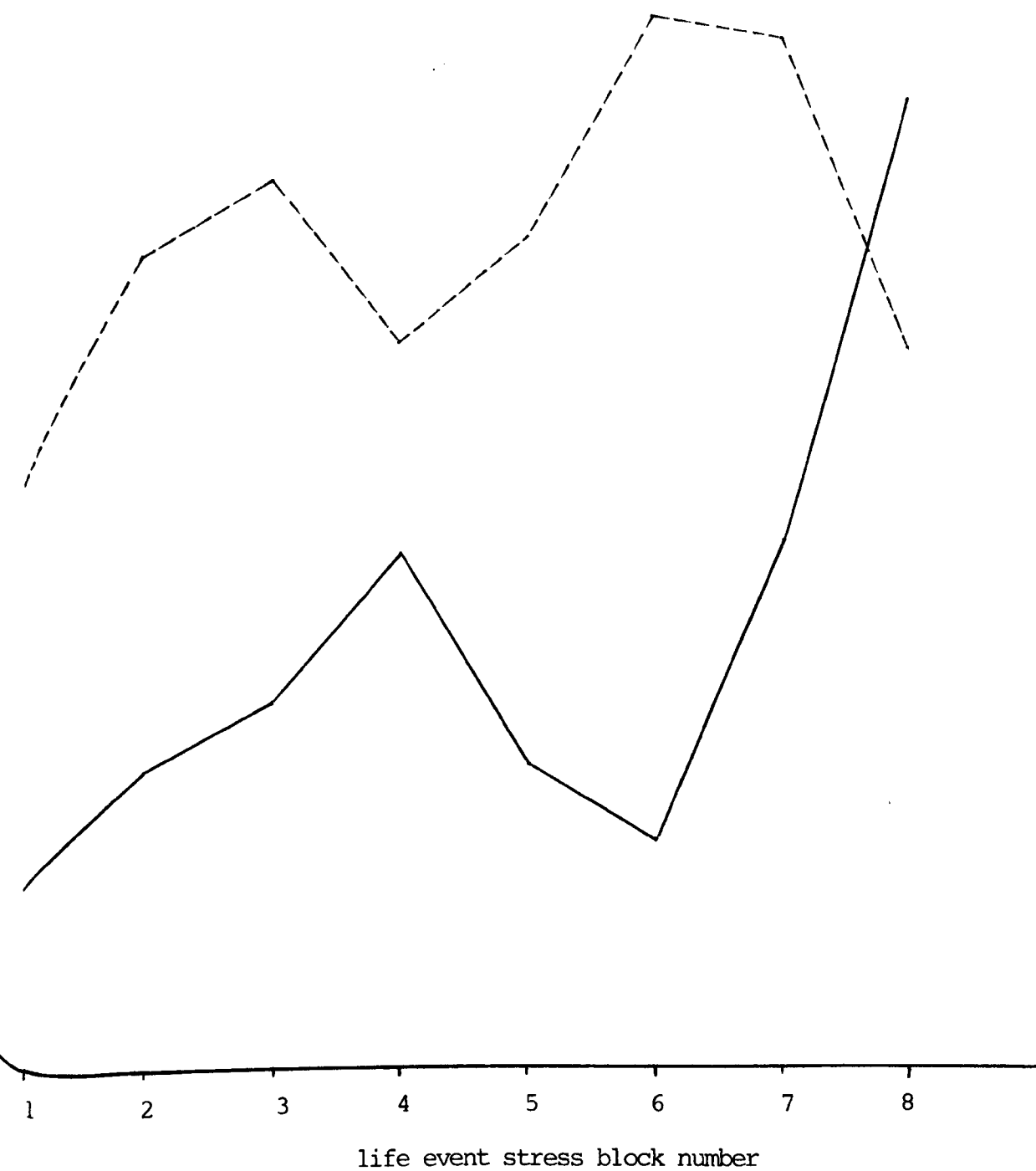
life event stress block number

Moving average graph, mean Beck Depression Inventory scores for
overlapping blocks of respondents at increasing levels of life event stress:
High RNO group (broken line) and low RNO group (solid line)

only modestly with increasing levels of life event stress.

The moving average graph for high and low RNO groups showed a different pattern (Figure 3). The high RNO group's BDI scores showed no consistent linear relationship with stress. High RNO individuals at the lowest levels of life event threat had high levels of depressive symptomatology, showing that high BDI scores in this group were not in response to any commonly accepted definition of life events, at whatever level of severity. At high levels of stress, there was little difference in the Beck scores of the two groups.

Athough these exploratory analyses must be treated with caution, these graphs show no clear evidence of a 'threshold' effect in the high RNO or low esteem groups, and suggest that the signficant analysis of variance results are not an artifact of dichotomising life events at a high stress level.

9.4 Discussion

The event-related (vulnerability) model of negative cognitive style and depression was not supported by this study. Relating the results (Table 2) to the predictions (Figure 1), it can be seen that the pattern of means consistent with the diathesis stress model was not found for any measure. Instead, the findings were largely consistent with the mixed aetiology model, in that the greatest evidence for cognitive vulnerability, in terms of making internal attributions for negative outcomes and lacking positive self esteem was found in depressed mothers

who had not experienced life events. The same trend was found for self depreciation.

There was some support too for the symptom model. Many depressive cognitions seem to be reflections of clinical state. Lam, Brewin and Woods (1985) found that scores on a number of measures of depressive cognitions such as dysfunctional attitudes and automatic thoughts were equally elevated in depressed elderly patients whether or not they had experienced a life event. This is similar to our findings for RPO and self-depreciation. However, our results are in accord with Brewin's (1985) conclusions that the symptom model cannot account for all the data.

The mixed aetiology model has two implications. First, life stress can act to increase the risk of depression onset irrespective of the individual's cognitive style, and second, there may be depressions in which a negative cognitive style is acting as an independent provoking factor. There are, however, at least two reasons to interpret the findings with caution. First, the data reported are from a cross-sectional survey where the temporal sequence of cognitive style, life event and depression onset cannot be ascertained with the precision necessary to make firm causal statements. We cannot, for example, exclude the possibility that a maladaptive cognitive style is a result of being depressed in the absence of an obvious precipitating event. For this reason, research using attributional and life events measures in a longitudinal survey is needed. Second, it should be remembered that although, in this sample, some mothers had become depressed in the absence of life stress, there is evidence that most depressions are

precipitated by life events. In this regard, it is important to note that we did not assess attributions for the particular events which the mother had experienced. The scales used measure attributions for general outcomes. Having made these caveats, it can be restated that the data do allow a differential prediction for the two models and are consistent with the view that negative cognitive style acts as an independent provoking factor as well as being symptom-related.

The moving average analyses revealed an interesting difference between low self esteem and Responsibility for Negative Outcomes. Self esteem seemed to act to protect individuals at higher levels of event stress from becoming depressed, compared to low esteem mothers who responded to lower levels of stress with symptoms. However, those who became depressed without a severe event did have lower levels of esteem even compared with other 'cases', which is consistent with the role of self esteem as an independent factor. This does not imply that low self esteem, or other cognitive vulnerability, is unrelated to social and demographic variables. For example, there is evidence that the locus of control is associated with socio-economic status (Lefcourt, 1972) and that there are sex differences in attributional style (Brewin & Shapiro, 1984; Ickes & Layden, 1978). As the present sample is homogeneous with regard to sex and social status our data are uninformative about such differences.

A linear relationship between life stress and symptomatology was not found for mothers with an attributional style of taking responsibility for negative outcomes. These mothers had high levels of symptoms even in

the absence of stress. Depressed mothers with high RNO scores may
however be responding to symbolically stressful events, an example being
'anniversary reactions' in bereavement. These respondents may certainly
have perceived their events as stressful but the non-reactive measure of
event stress used would not show this. These results imply that an
internal attributional style for negative outcomes is either
independently related to depression, or that those depressions which are
unrelated to events are characterised by this style. It must be noted,
however, that the level of depression for these respondents as assessed
by the BDI was no more severe.

Our findings clearly fail to support the idea that depression is
precipitated by attributions or attributional style in conjunction with
life events. Brewin (1985, p.305) also concluded his review of learned
helplessness research by stating: "The results quoted previously have not
supported models in which the occurrence of an uncontrollable event was a
necessary part, but have suggested that cognitions bear a direct relation
with mood." These findings have important implications for the
reformulated learned helplessness theory which, despite its apparent
simplicity, may now be seen to embrace a number of possible
attribution-depression relations. A glimpse of this complexity was
provided in the present study by its support both for the symptom and
mixed aetiology models. It is evident that testing the theory requires
extreme care and that simple correlational designs involving measures of
attributions and depression (e.g. Seligman et al., 1979; Raps et al.,
1982) are essentially uninformative. While proponents of the
vulnerability model (e.g. Metalsky et al., 1982) have recognised this and

argued that attributions and depression should only be related in the presence of a life event, our evidence has supported the contrary proposition that they may only be related in the absence of a life event. In either case, studies which fail to assess the level of life stress appear destined to produce conflicting results.

The possibility that attributions are independent provoking factors rather than being event-related, must prompt a re-examination of their role. Perhaps attributions reflect some other aspect of self-perception which is not so closely tied to life stresses. Brewin & Furnham (in press) have found that the relation of attributions to depression may be the result of their joint association with a third variable, social comparison. Using path analysis, they were able to show that social comparison had a direct relation with depression that was not mediated by causal perceptions, although perceiving oneself as different from others was also associated with a depressive attributional style. Depressive attributions might also be a reflection of negative self-evaluation rather than necessarily being concerned with causal judgements (Brewin, in press). Either of these aspects of self-perception could act to precipitate depression in the absence of what are commonly accepted as significant life events.

In summary, there is now cause to question the belief that the onset of depression is related to causal perceptions about actual stressful events. It appears possible that events, and possibly cognitions also, may act as independent provoking factors. The role of attributions in the recovery from or maintenance of depression has not been addressed in our study, however, and awaits future longitudinal research.

CHAPTER TEN: CASES ON A CONTINUUM: THE PSYCHOLOGICAL CHARACTERISTICS OF PSE CASES, THRESHOLD CASES AND NON-CASES IN A COMMUNITY SURVEY

10.1 Introduction

Epidemiological methods in psychiatry depend on case counts to estimate the prevalence of psychiatric disorder in the community independently of help seeking and service provision. When epidemiologists counted only the dead, a simple dichotomy was easy to apply, with few problems of reliability and validity in case identification. In contrast, psychiatric case counting has brought inevitable problems of case definition, since an unambiguous distinction between 'cases' and 'non-cases' can rarely be made. A number of authors have challenged the very concept of caseness, claiming that there is a continuum from mental health to mental illness and that any attempt to define categories of illness are based on an arbitrary cut-off point on this continuum (Goldberg and Huxley, 1980; Williams, Tarnopolsky and Hand, 1980; Ingham, 1982). This view is well expressed by Goldberg and Huxley (1980, p.3):

"...the decision as to where subclinical disturbance ends and being a psychiatric case begins is, in the last analysis, arbitrary...in order to be diagnosed as, for example, a 'major depression', a patient must possess certain key symptoms and then at least five out of a shopping list of eight associated symptoms. Naturally, some

patients just fail to make it to the criterion. This sort of
procedure is perfectly reasonable; but it is also completely
arbitrary."

Many psychiatrists, on the other hand, strongly defend a 'categorical'
model based on the classical concept of neuroses as disease entities
having characteristic patterns of symptoms and signs with a predictable
course and outcome. For example, Wing (1970, p.96) argues:

"A diagnosis is a hypothesis that a disease is present and that
other diseases are absent...the hypothesis can always be
tested...since a diagnosis should imply a course, a treatment and a
means of management".

Despite these paradigmatic disagreements, there is little argument that
case counting methods have proved powerful tools since the development
of reliable criteria for identifying cases. In Britain, the 9th edition
of the Present State Examination, suitable for general population
surveys, has been influential in providing data from different samples
which are directly comparable (Orley and Wing, 1979; Duncan-Jones and
Henderson, 1980; Bebbington et al., 1981; Casey, Dillon and Tyrer,
1984). Used with the ID-CATEGO system, respondents can be assigned to
one of eight Index of Definition (ID) levels of increasing certainty
that a recognisable functional disorder is present. ID level 5 is
commonly taken to be the minimum level of equivalent severity to a
psychiatric case (Wing, 1978). This threshold can be seen, therefore, as
either an entirely arbitrary point at which to dichotomise an underlying

dimension of pathology, or as approximating to a naturally occurring boundary between categories.

There is, of course, a conceptual difficulty in identifying untreated cases of psychiatric disorder in the community who are 'equivalent' to those seen by psychiatrists. These 'community cases' do differ in that many have not sought psychiatric help or have not been recognised as needing it. There is a very great variability among GPs on the diagnosis of psychiatric disorder, even when using a standard rubric (Jenkins, Smeeton, Marinker and Shepherd, 1985). It has been noted that psychiatrists themselves do not lay down psychiatric clinical criteria, since they rarely reject people referred to them (Ingham and Miller, 1976). Referral to a psychiatrist (and hence, indirectly, the definition of psychiatric categories) depends, therefore, on individual GPs' styles of practice as well as many other factors, including help-seeking behaviour, concomitant physical illness, gender and socio-economic status (Mechanic, 1986). For these reasons, it has been argued that definitions of 'mental illness' which were developed by studying hospital populations represent a distortion of the true range of mental health difficulties in the community, most of which are treated by general practitioners (Goldberg and Huxley, 1980).

Most of the people identified as 'cases' in community surveys are at the threshold (i.e. at the minimum level at which they could be designated cases) and are not under psychiatric care. Furthermore, factor analytic methods applied to symptom patterns in the general population do not yield traditional psychiatric diagnostic categories (Cooke, 1980).

Given this, it has been suggested that the findings of hypothesis testing community epidemiology (for example, risk factors which predict onset) may not apply to patients seen in psychiatric clinics (Golin and Hartz, 1978; Bebbington et al., 1984).

The characteristics of the group of community 'cases' at the threshold are therefore of research interest. It has been noted that symptoms alone do not adequately distinguish between community and psychiatric cases (Miller and Ingham, 1976; Williams et al., 1980; Dohrenwend et al., 1983). However, data from community surveys relevant to this issue are not commonly reported, perhaps because these surveys tend to assume a case category model and hence do not include continuously distributed individual difference measures.

The present study investigates data from a community survey of working-class mothers of young children which included, in addition to the short form of the PSE, continuously distributed measures of psychological distress, well-being, cognitive style and self-esteem. It is therefore possible to examine ID levels, and to describe non-cases, threshold cases and definite cases, in terms of these other measures. In this way, the characteristics of these groups can be compared without reference to the assumptions underlying the case identification procedure. It is also possible to investigate the 'continuum' versus 'case category' hypotheses, for example, in terms of whether a continuously distributed measure of psychological distress is linearly related to ID level (as in the continuum hypothesis), or whether there is evidence of a discontinuity of severity between ID4 (and below) and ID5 (and above).

The extent to which community cases differ from non-cases qualitatively as well as in severity can also be investigated by searching for 'marker' characteristics at the case threshold. For example, certain aspects of low self-esteem or negative cognitive style should, in the categorical model, only appear at a threshold of symptom severity, rather than be present to a lesser degree at lower ID levels.

10.2 Method

The Sheffield mothers survey

Full details of the survey which provided the data to be examined in this paper are available in Parry (1986) and Parry and Shapiro (1986). The sample consisted of 193 working-class mothers of young children living in Sheffield, UK. Mothers were identified from health visitors' records and were selected from a larger pool of respondents in order to ensure approximately equal numbers of women with each combination of four dichotomised variables: paid employment, severely stressful life event, social support and pre-school child. As this is not a random sample, the case rates should not be taken as prevalence figures for working-class women in Sheffield without qualification.

Measures

Psychiatric case status was assessed using the 9th edition of the
Present State Examination (Wing, 1980; Wing, Mann, Leff et al., 1978).
Interviewers were a clinical psychologist and two social science
graduates. All had interviewed psychiatric patients during their PSE
training to counteract the tendency of non-psychiatrists to rate as
'present' symptoms of non-clinical severity (Copeland, Kelleher, Gourlay
and Smith, 1975; Wing, Nixon, Mann and Leff, 1977). Cases were
identified by using the CATEGO-ID system (Wing and Sturt, 1978).

The Beck Depression Inventory (BDI) is a 21 item measure of the behav-
ioural and physiological manifestations of depression, irrespective of
diagnosis, which treats depression as a "...dimension and not simply as
a discrete nosological entity" (Beck et al., 1961, p.568). Thus, the
BDI does not distinguish whether disturbances in mood, sleep pattern,
appetite, work performance and so on occur as part of a 'depressive
illness', 'anxiety disorder', physical illness or, indeed, simply as
isolated signs of non-specific psychological distress. Each item has
four or five response alternatives corresponding to a four point scale.
The interviewer recorded the responses and answered any queries. The
total score is obtained by summing the individual item scores.

Self depreciation and self-esteem were measured by summing the
negatively and positively worded items respectively of Rosenberg's
(1965) measure of self- esteem. Each item was scored on a three point
scale, a high score representing high levels of self-depreciation (e.g.

I am inclined to think I am a failure), or high self-esteem (e.g. I am a person of worth). The negatively and positively worded items of this measure are thought to tape different aspects of the self concept (Zeller and Carmines, 1980; Warr and Jackson, 1984) and so were examined separately.

Cognitive style was assessed using two measures developed within attribution theory: Responsibility for Negative Outcomes (RNO; e.g. a tendency to self-blame) and Responsibility for Positive Outcomes (RPO; e.g. a tendency to credit oneself with successes). Details of these measures are available in Brewin and Shapiro (1984) and their use with epidemiological methods is examined in Chapter Nine.

Statistical analyses

The continuously distributed measures were broken down by ID level using the Breakdown subroutine of SPSS-X. Discriminant analyses were performed using the Discriminant subroutine. Where outliers were a potential problem in examining means, a robust midpoint estimator was used. Trimeans were calculated by summing the medians of the top and bottom 25% of scores, twice the median of the whole, then dividing by four (Tukey, 1977). The overlap between two distributions of scores was calculated (Ingham and Miller, 1976) by examining the percentage of each distribution at each level of the target variable and where cases and non-cases have identical scores, summing the smaller of the two percentages.

10.3 Results

Of the 193 women interviewed, 39 (20.2%) were found to be at ID level 5 or above. Of these, 32 (82% of identified cases) were at the threshold level, with only seven women (3.6% of the whole sample) at ID level 6 or above. At ID level 5 and above a provisional ICD code can be assigned. Most of the identified cases were classified as neurotic depression (65%) or anxiety disorder (22%).

Of the threshold cases, 46.8% were receiving no medical attention at the time of interview, 25% were seeing a general practitioner for a physical complaint (predominantly unexplained headaches, gynaecological or low back pain), and 28% were under the care of their GPs for 'nerves' or 'depression'. The proportions of threshold cases receiving anxiolytic medication or antidepressants were 15.6% and 12.5% respectively, with a further 15.6% regularly using analgesia, whether prescribed or self-administered. When the BDI scores of the group of women who were not consulting a doctor were compared with those who were, it was found that the non-consulters had a significantly higher mean BDI score (non-consulters, $x=16.77$, $\sigma=9.16$; consulters, $x=13.75$, $\sigma=7.05$; $t=2.88$, 30 df, $p<.01$). To check whether this difference was robust, trimeans were calculated for each group with the following result: non-consulters, 15.25; consulters (physical), 15.75; consulters (psychiatric), 12.75. Thus it is not the case that non-consulters are less distressed psychologically. Those women who were being treated for a psychiatric problem had lower BDI scores than either non-consulters or those being treated for a physical complaint.

There were seven definite cases, of which five were at ID6, one at ID7 and one at ID8. These latter two and one of the others were seeing a psychiatrist on an out-patient basis, but the ID8 respondent was admitted to a psychiatric ward shortly after her interview. Three of the remaining women were being treated by their general practitioners. One of the definite cases was receiving no treatment at the time of interview as she expressed a strong dislike of taking tablets and felt she was suffering from an undiagnosed allergy.

Table 10.1 gives means, standard deviations and standard errors for the measures of psychological distress, positive affect, self-esteem and cognitive style across six ID levels. As there were so few cases above ID6, all definite cases were pooled into one group, ID6+. It was thought unwise to assure that ID level is an interval scale, so simple regression analysis of trend was not performed. The more conservative one-way analysis of variance showed that the means differ significantly across the six ID levels for the BDI ($F(5,187)=24.53$, $p<.001$), Self depreciation ($F=11.91$, $p<.001$), Self esteem ($F=6.64$, $p<.001$) and more modestly for Positive affect ($F=2.67$, $p<.05$). The means of the two cognitive style measures were not found to differ significantly between the six ID levels, although the trend for RNO should be noted. When the sample was split into cases and non-cases, all the measures showed a significant difference between the two groups with the exception of RPO.

The BDI and the two self-esteem measures, particularly the items relating to self-depreciation, were therefore most clearly reflecting differences between respondents at different ID levels. For these three measures, the degree of

Table 10.1: Psychological measures broken down by ID level: BDI, Self depreciation, Self esteem, Positive Affect, RNO, RPO

		ID1	ID2	ID3	ID4	ID5	ID6+
	n	34	63	35	22	32	7
	%	17.6	32.6	18.1	11.4	16.6	3.6
BDI	mean	3.24	5.79	7.77	7.14	15.50	21.71
	s.d.	4.03	5.79	4.74	4.66	8.21	9.12
	s.e.	.69	.73	.80	.99	1.45	3.45
Rosen-	mean	1.46	2.29	3.35	3.23	5.28	6.71
	s.d.	2.26	2.30	2.63	1.97	3.22	2.75
	s.e.	.39	.29	.45	.42	.57	1.04
RNO	mean	4.97	5.33	6.09	6.27	6.19	6.86
	s.d.	2.43	2.02	2.77	2.27	2.46	1.77
	s.e.	.42	.25	.48	.48	.43	.67
RPO	mean	8.32	8.47	8.88	8.73	8.63	7.29
	s.d.	2.26	1.95	2.10	2.21	2.24	1.60
	s.e.	.39	.25	.37	.47	.40	.61
Rosen+	mean	9.24	8.48	7.97	8.09	7.38	5.71
	s.d.	1.00	1.83	1.62	2.00	2.21	2.63
	s.e.	.17	.23	.27	.43	.39	.99
Posaff	mean	3.26	2.66	2.51	3.05	2.13	1.29
	s.d.	1.62	1.73	1.75	1.89	1.54	1.80
	s.e.	.28	.22	.30	.40	.27	.68

overlap in the distributions of the cases and the non-cases was calculated, as recommended by Ingham and Miller (1976). In this simple method, the smaller frequency percentage of the two distributions at each level of the target variable is summed to give a total percentage of the distribution where cases and non-cases have identical scores. It was found that there was an overlap of 35.9% for BDI scores, 56.2% for self-depreciation and 74.88% for self-esteem. This demonstrates that, even for these measures which show the clearest distinction between ID levels, there is considerable overlap between the distributions of cases and non-cases. It could be suggested that this argues, prima facie, in favour of a continuum model rather than naturally occurring categories. However, further investigation of the BDI and self-depreciation scores is indicated. The breakdown of BDI means is presented graphically in Figure 10.1.

There does appear to be a discontinuity in the linear relationship between ID level and BDI score, occurring at ID5. A similar pattern is seen for the self-depreciation means across the six groups. Inspection of the standard errors of these means shows that the data are to some degree heteroscedastic, in that the variance increases with ID level. This raises the possibility that the pattern is an artifact of extremely high scoring respondents at ID levels 5 and 6 overinfluencing the means. This occurs because for these scales the data are skewed towards low scores with a long 'tail' of high scores, and the arithmetic mean is sensitive to outliers of this type. To investigate this, a midpoint estimator which is resistant to outliers was calculated for the BDI and Self-depreciation: the trimean. Despite using a robust method, an almost
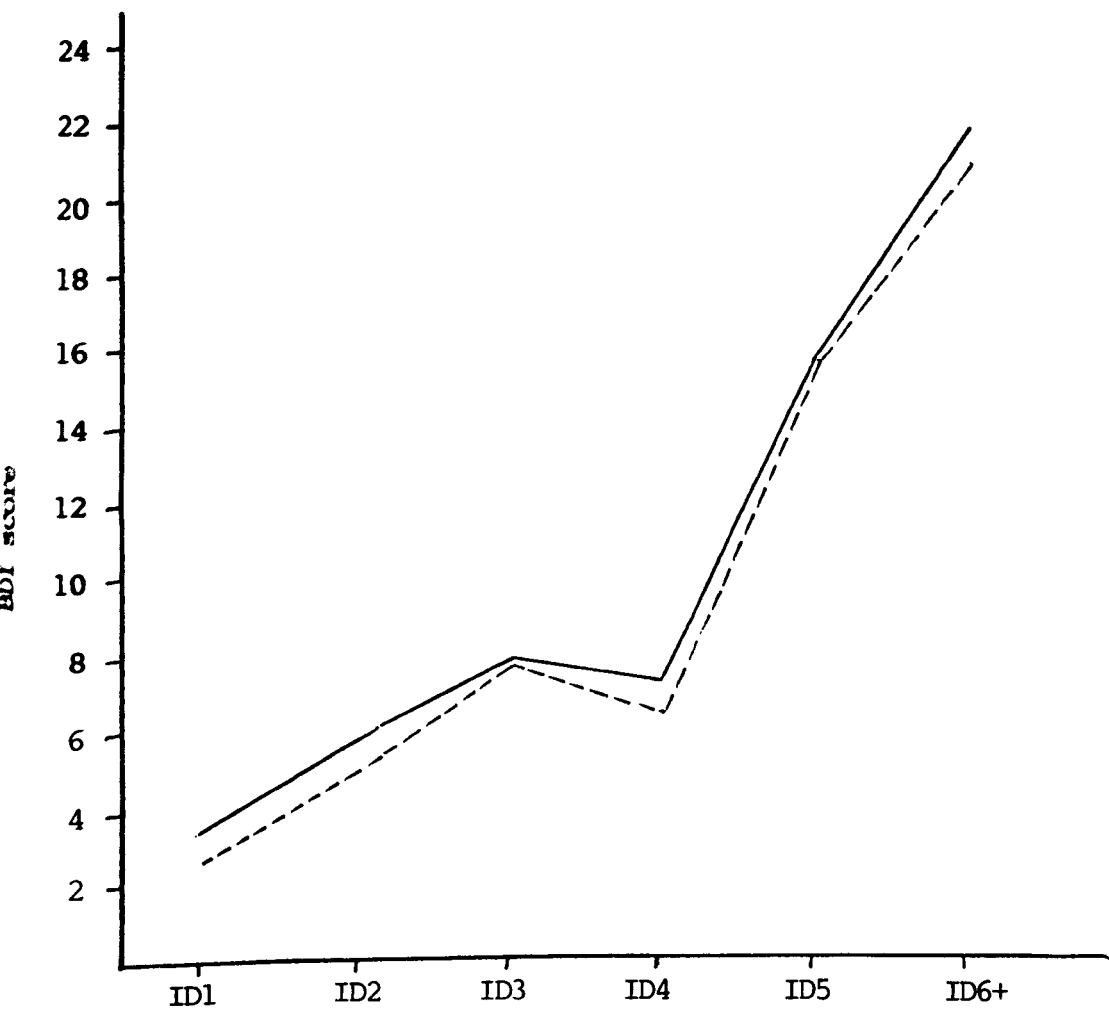
Figure 10.1   Beck Depression Inventory means (solid line) and
             trimeans (broken line) across six ID levels.

identical pattern of means was obtained (see Figure 10.1 demonstrating that the high BDI and self-depreciation scores of ID5 compared to ID4 was not an artifact of a small number of very high scoring respondents.

The jump in severity of BDI scores between ID1-4 and ID5 and above can be seen most clearly by examining the cumulative frequencies of respondents across the range of BDI scores for each ID level separately (see Figure 10.2).

It is also possible to use Ingham and Miller's (1976) method to calculate the degree to which the distribution of BDI scores overlaps between adjacent ID levels. The following result was obtained:

Percentage overlap

ID1/ID2   50.5;

ID2/ID3   47.2;

ID3/ID4   63.0;

ID4/ID5   24.1;

ID5/ID6   24.2

Although the final figure should be treated cautiously because of the small numbers involved, the results demonstrate that ID5 cases do have less overlap with ID4 than would be expected if ID levels were reflecting a smooth continuum. However, one point immediately apparent from Figures 10.1 and 10.2 is that ID level 4 does not reflect increasing severity of psychological distress or low self-esteem. Indeed, the discontinuity in linear trend occurs not because ID5 scores are high

Figure 10.2 Cumulative frequencies on Beck Depression Inventory

ID levels separately: non-cases (solid lines), cases (broken lines)
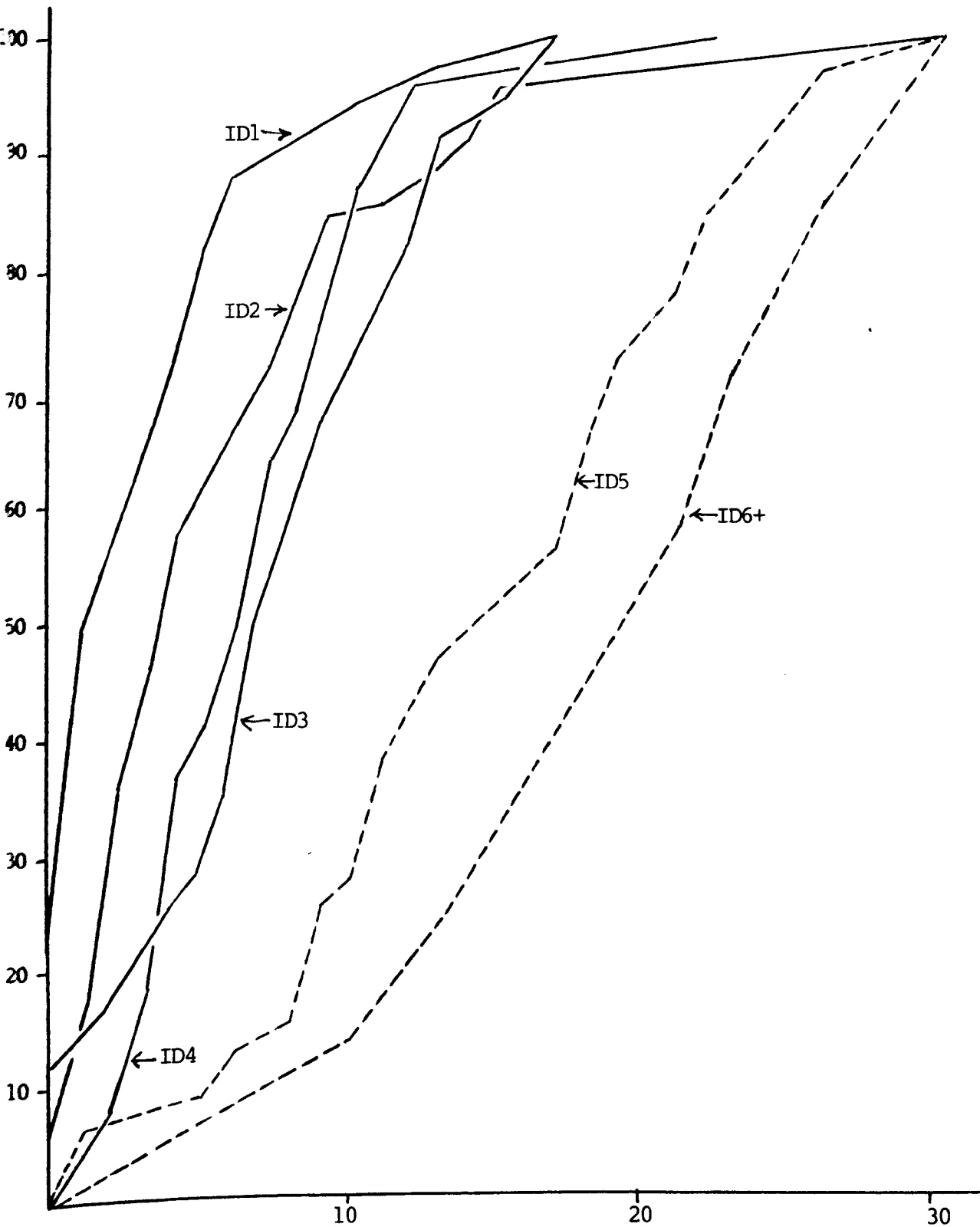
(and similar to ID6), but because ID4 scores are low (and similar to ID3). This may be because it is possible for respondents to be assigned to ID4 with only one key symptom in the absence of other symptoms (Wing et al, 1978), and it confirms that ID level should not be treated as an interval scale.

The ID4 group was therefore examined more closely to investigate its characteristics in this sample. Only three of the 22 ID4 respondents had more than 10 symptoms on the PSE, the remainder were placed in ID4 rather than ID3 (or in some cases ID2) because of a 'key symptom'. However, in no case was a key symptom present in the absence of other symptoms. The three respondents who had a high number of 'non-key' symptoms did not show consistently high BDI scores compared with the rest, although the small n precludes further analysis of these respondents' scores. Instead, those ID4 respondents with very few symptoms in addition to the key symptom (2-4) were compared to those with more, yielding equal numbers (11) in each group. This did not reveal a significant difference between BDI means (five or fewer symptoms, x=6.64, σ=3.85; six or more symptoms, x=7.64, σ=5.50, t=1.08, 20 df, n.s.). Indeed, when one 'outlier' with a BDI score of 23 is omitted, the latter group mean falls to 6.1 (σ=2.18). It therefore seems that although the ID4 level has an unexpectedly low BDI mean, this is not due to the CATEGO procedure masking a sub-group of higher scoring respondents who would otherwise have fallen midway between ID3 and ID5.

Having found some evidence of a discontinuity of scores at the case threshold, in order to examine the 'categorical' model most fully, it is

worth decomposing the various scales into their constituent items and examining which combination of items best predicts PSE caseness. Discriminant analysis was used. This method derives a linear function empirically by selecting those individual items which discriminate best between cases and non-cases. As there were too many individual items to analyse together, the 21 BDI items were first analysed separately from the other self report items. The best discriminators from both analyses were then pooled and a third analysis performed. The selection rule for these analyses was to maximise Rao's V, although closely similar results were obtained using Wilks' lambda. As there were 39 individuals in the smallest group, only the ten best discriminators were selected from this analysis to derive a discriminant function directly.

Twelve of the 21 BDI items were selected as good discriminators between cases and non-cases (see Table 10.2). The discriminant function using these 12 was able to classify 86% of the respondents correctly, when the probability of group membership was Baysean weighted to account for the discrepancy in size of the two groups.

Table 10.2: Discriminant analysis, Criterion groups: ID1-4 vs ID5-8
Beck Depression Inventory items

Items selected for discriminant function:	Rao's V-change	sig
Mood	62.74	<.001
Crying spells	40.11	<.001
Guilt	24.10	<.001
Indecisiveness	13.10	<.001
Self punitive wishes	14.28	<.001
Fatigue	9.71	<.01
Body image	4.29	.05
Self accusations	6.21	.01
Sleep disturbance	2.78	.09
Somatic preoccupation	2.89	.09
Work inhibition	3.09	.08
Self hate	2.93	.09

Using a combined item pool of all the other positive affect, self-esteem, self-depreciation and attributional items, ten items were selected as good discriminators (see Table 10.3). This function correctly classified 84.7% of the respondents into their known categories.

The 22 items from these two analyses were pooled and a further analysis performed, from which 18 remained, of which the ten best discriminators were selected. These are shown in Table 10.4. Using the direct method, a discriminant function was derived from these ten items which correctly classified 92.17% of the respondents. Figure 10.3 shows the histogram of the discriminant scores for cases and non-cases.

Kolmogorov-Smirnov tests were applied to these two distributions separately and for the whole sample, to examine the goodness of fit to a normal distribution. The following results were obtained: Non-cases, $Z=1.82$, p .01; cases, $Z=0.59$, n.s.; whole distribution, $Z=2.17$, p .001. This indicates that, even when deriving the best function to distinguish successfully between cases and non-cases, the resultant distribution of the whole sample is normally distributed rather than consisting of a bimodal pattern which can be separated into two normal distributions. Thus, even giving the categorical model the best possible chance to be demonstrated, the continuum model holds up well. This is underlined by examining the selected items to identify any which appeared for the first time at ID5 or above. Only one - the BDI item 'I get too tired to do anything' - was endorsed solely by women at ID5 or above, there being some women at lower ID levels who endorsed other items. However, the

Table 10.3: Discriminant analysis, Criterion groups ID1-4 vs ID5-8
Self esteem, positive affect and cognitive style items

Items selected for discriminant function	Rao's V-change	sig
All in all I am inclined to feel that I am a failure	29.75	<.001
At times I think I am no good at all	13.20	<.001
During the last few weeks I have (never) felt on top of the world	11.38	<.001
During the last few weeks I have (never) felt particularly excited or interested in something	11.06	<.001
It will be largely a matter of luck if I succeed in life	10.64	<.001
During the last few weeks I (never) felt pleased about having accomplished something	2.21	.14
My misfortunes have resulted mainly from the mistakes I've made	2.74	.10
For most of my misfortunes and disappointments I have no-one to blame but myself	2.81	.09
I (do not) take a positive attitude to myself	1.81	.18
Success seems to have been largely a matter of having been in the right place at the right time	1.67	.19

Table 10.4: Discriminant function: 10 best discriminators from total item pool

(Listed in order of the magnitude of their contribution to the function)

Item selected

Depressed mood (BDI)

Crying spells (BDI)

"At times I think I am no good at all" (Self deprec.)

Indecisiveness (BDI)

Self punitive wishes (BDI)

Fatigue (BDI)

Somatic preoccupation (BDI)

Negative body image (BDI)

"During the last few weeks I (never) felt
excited or interested in something" (Positive affect)
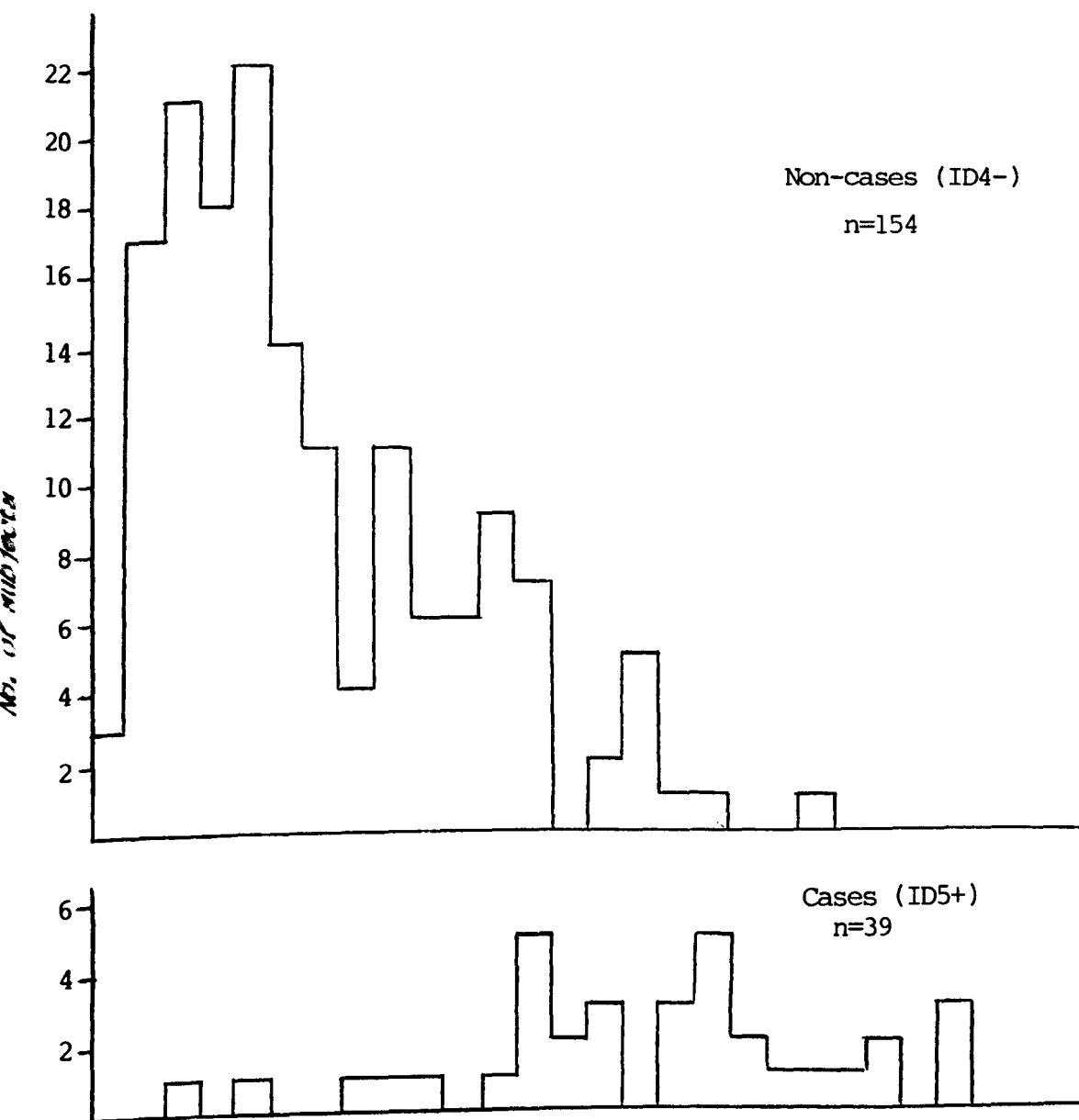
Work inhibition (BDI)

Figure 10.3: Discriminant function derived from all items.
Histograms of cases and non-cases

discontinuity in linear relationship occurring at ID5, as well as the demonstration that it is possible to discriminate successfully between cases and non-cases, implies that <u>although the case threshold does represent a cut-off point on a continuum, it is not, as has been suggested, an arbitrary one.</u>

10.4 Discussion

The sample in the present study was unusual in that women with and without paid employment, pre-school children, social support and a severe life event were represented in approximately equal porportions. This sampling strategy results in the exclusion of 57 women who would have been interviewed in a representative survey, in favour of respondents with the required combination of social stress factors. Employed mothers with preschool children and a threatening life event are undoubtedly overrepresented, as are certain other combinations, since the purpose of the selective sampling strategy was to yield adequate numbers of such mothers to test hypotheses about independent relationships between these factors and psychiatric disorder. It is therefore important to assess the degree to which this departure from random sampling has affected the proportion of identified cases. An appropriate comparison is with mothers of young children in Camberwell (Bebbington et al., 1981) where the same case identification procedure was used in a randomly selected urban sample. Here, a prevalence of 19.6% was reported for working class married women (with or without children at home), and of 23.5% for mothers (of mixed social class).

The case rate in the present study of 20.2% is closely similar, suggesting that the sampling strategy has not grossly distorted the overall estimate of prevalence. There is, of course, an inevitable danger with the survey method that members of the population at risk who are in-patients will not be contacted. Hence, the most severe levels of disorder will be under-represented, although the numbers concerned are, relative to the whole sample, very small.

Only 7.7% of the cases had consulted a psychiatrist in the month before interview and 30.8% were under treatment for a psychiatric condition from their GP. The figure of 38.5% receiving treatment in a one month period is consistent with those of other workers. For example, Weissman, Myers and Thompson (1981) using Spitzer's (1975) Research Diagnostic Criteria in a mixed sex sample, reported that 31.3% of respondents with a psychiatric diagnosis received treatment over a one year period, noting that the figure for women was higher. Roberts and Vernon (1982) using the same criteria, report a figure of 46% for women in a one year period. In the present study, it was found that a further 23% of PSE cases had consulted for a physical problem, predominently pain with no clear organic origin. These women had similar BDI scores to the non-consulters, which were rather higher than for those receiving GP treatment. Some GPs may not respond to consultations for headaches and back pain by exploring concommitant anxiety and depression. This is not to imply that such complaints are psychiatric rather than physical, but that psychological symptoms may be masked by a somatic presentation. Regular use of analgesic medication (i.e. daily rather than in response to occasional headache) was found to be as common as benzodiazepine use.

In all the analyses reported, the 'continuum' hypothesis - that there is an underlying dimension of psychological distress from mild to moderate to severe - received some support. Although there was a discontinuity in severity at the case threshold both for Beck scores and poor self-esteem, the overlap in scores between cases and non-cases was high, especially for the measures of self-esteem and cognitive style. By selecting and weighting items from the total pool on which cases and non-cases differ, 'natural' categories are given the best opportunity to emerge. However, such a discriminant function was normally distributed across the whole range of respondents. Finally, there was no strong evidence of 'marker' items which were endorsed only at ID5 or 6+.

Having found evidence consistent with an underlying continuum of distress, it is argued that the case threshold is not arbitrary, in the sense of capricious, arising from accident rather than from rule' (Chambers). The case threshold evolved to identify disorders equivalent to the severity and patterns of symptoms seen by psychiatrists, and indeed there was evidence of a sharp increase in severity of depression between subthreshold disorders and cases. It seems that the case threshold may correspond to a point where distress 'gathers momentum'. Subthreshold levels ID3 and 4 were found to be very similar when examined in terms of the continuously distributed variables. Discriminant analysis showed that the Beck depression items were most successful at distinguishing cases from non-cases, although a function consisting of selected individual difference items also showed a good discrimination. This function consisted of items tapping feelings of failure, lack of positive affect, external attributions for success and

internal attributions for failure. Using the total item pool, a
discriminant function correctly classified a high percentage of total
sample, but was less successful at the more demanding task of avoiding
false negatives. Of the 39 cases, 11 (28.2%) were misclassified.

The examples of height and sex exemplify idealised forms of continuously
distributed versus categorical data. Height is normally distributed and
any dichotomy is arbitrary, although it is possible to select a point
beyond which people are 'abnormally tall'. Women and men fall into
naturally occurring categories, and it is in these circumstances that
the analysis of contingency tables has most legitimacy. Neither model
is entirely appropriate for psychiatric disorder. A common analogy here
is with hypertension, since blood pressure is continuously distributed
in the population. However, it would be wrong to say that the threshold
at which blood pressure is deemed 'high' is an arbitrary one. There is
a point above which other clinical conditions are likely to occur in
association with hypertension. This point is defined by studying ill
populations. This does not imply a 'disease model' of hypertension.
Similarly, the use of a case threshold in epidemiology can be justified
in terms of its clinical utility and these data imply that it is a
meaningful rather than arbitrary point at which to make a dichotomy.
The fact that the categories can be practically useful and empirically
valid does not argue one way or another for the 'disease entity' view of
psychiatric disorder.

The use of distributional methods of data collection and analysis should
not be eschewed. Used with appropriate care, these methods use more

available information more efficiently than anlysis of contingency tables and provide a useful check that findings are not an artifact of dichotomising an underlying continuum (Cooke, 1980). Some workers find these techniques (e.g. multiple regression) too far removed from the data and admittedly a contingency table is closer to raw data than a table of beta weights and R^2 changes. However, as the more recently developed robust statistical methods and exploratory data analysis are becoming routine (Jackson, 1986), the misleading use of multivariate analysis will become less common. There are good methodological reasons to use both categorical and dimensional measures in the same study, allowing checks on method variance and providing ways to explore empirically the underlying assumptions of both methods. In this way each method can complement rather than compete with the other.

CHAPTER ELEVEN: DISCUSSION AND CONCLUSIONS

11.1 Methodological critique

Although care was taken in planning the research, it has a number of methodological limitations. Some of these are an inevitable consequence of the research design and selection criteria. Others would have been avoidable and, with the benefit of hindsight, can be regretted.

There are well-acknowledged limitations to the cross-sectional design. Originally a prospective study had been planned, but proved too costly and time consuming to implement. Because the mothers were interviewed at only one point in time, associations between paid employment and well being are open to more than one interpretation. Where such associations were observed (in the high life event group) they may have been due to the clinical status of the women concerned. For example, the depressed mothers with average or above average social support may have been less motivated to find or remain in paid employment following a stressful event. The value of a prospective design here would be to follow up nonemployed mothers as they re-enter the workforce in order to monitor changes in clinical status.

On the other hand, dissatisfaction with the limitations of inference in cross-sectional studies should not blind us to the difficulties with prospective ones. One problem here is that one does not know whether

differences between clinical scores on first and second measurement occasions accurately reflect a change in clinical status typical of the time period under study. Clinical status at Time 1 can be accounted for in predictive linear models, however, and this is a real improvement over correlational methods. Even with prospective studies, there is no escaping the necessity of retrospective questioning to estimate environmental and clinical change points in temporal sequence. Furthermore, temporal precedence of employment status change does not establish causality since other factors inevitably change at the same time.

The unusual sampling procedure in the present study was adopted for a specific purpose - to test for relationships between paid employment and well being without the effect being confounded with other, related, sociodemographic variables. This was also useful in disentangling social support and life event variance to test for a stress buffering effect. Essentially the procedure sifts a population until enough women with relatively unusual combinations of demographic characteristics are obtained to allow a model testing. Without such selection, a larger sample ($n > 250$) would have been needed to obtain the same numbers. However, there are disadvantages to this procedure. The desire to 'deconfound' variables may be misplaced if they are, in the nature of reality, inextricably linked. For example, if in practice, paid employment were always associated with higher income, there would not be much point in trying to 'partial out' the effect of income, since the result would be meaningless in the real world. It is clearly not the case in the present study that the variables are inevitably linked in this way, but the

question is one of representativeness. For example, as employed mothers

with poor social support and major life stress are relatively unusual,

they might be odd in other ways not measured by the study, so that

something else may account for their high symptom scores. Other studies

have not pinpointed an inverse relation between employment and mental

health, and this is consistent with their using randomly selected samples,

since such women are over-represented in the present sample.

The above points are an inevitable consequence of the research design,

but the study could have been improved in other ways within these design

constraints. When cases were identified, the point of onset of the

disorder was not dated carefully. This was because, at the time, I was

extremely sceptical about the reliability and validity of retrospectively

dating onset of symptoms on the basis of self report. This scepticism

was partly based on clinical experience with depressed individuals and

I still believe it is probably justified. Nonetheless, if only for the

purposes of replicating the work of Brown and his colleagues, it was not

wise to eschew the attempt. It proved possible, by going over tapes and

PSE schedules of the women meeting Brown's case criterion, to reconstruct

an onset/chronic distinction at a later stage. Women reporting extensive

symptoms discussed how long their symptoms had lasted, but very few

clearly stated that they had experienced chronic symptoms. For this

reason, the distinction between onset and chronic cases drawn in some

analyses in Chapter Eight can only be seen as an approximation to Brown's

procedure, and with hindsight it would have been better to have tried to

date onset precisely, since I have almost certainly underestimated the

proportion of chronic cases. The same point applied to the decision not
to rate a major difficulty on the basis of social support deficits.
Although there were, I felt, good meethodological reasons for doing this,
the result is that the data on difficulties cannot be directly compared
with those of other groups using Brown's measure, since we were far more
conservative in assigning women to this category.

In retrospect, a significant omission from the research protocol was a
measure of employment commitment. It is hard now to understand why this
was not included, but probably it was due to a concern that both the
interview and the paper and pencil questionnaire were becoming too
cumbersome and lengthy. At the very least, I should have included a
routine question on employment preference, since there was no direct way
of knowing if an employed mother would have preferred to be nonemployed
and vice versa. This limited the inferences which could be drawn in
Chapter Seven, and made it impossible to judge if the interesting inter-
action found between sex role attitude and employment status with regard to
anxiety levels was accounted for by employment commitment.

The lack of a full-time employed group is also cause for regret,
although there seemed very little choice about giving up the aim of
interviewing a substantial number given the difficulty in contacting
them. Eventually, 17 such women were excluded. Had they been inter-
viewed, the sample of part-time and nonemployed mothers would have been
that much smaller, and the full-time group would not have been equally
distributed among social support, life event stress and pre-school

children cells. The only way around this would have been to make an early decision not to attempt to interview equal number of mothers with and without a pre-school child. On balance, I think the present sample is, in terms of the employment undertaken, rather typical of working class mothers with a child between four and seven years old. The implications of full-time employment for mothers with children in this age group are not yet well understood and would be well worth researching as a specific research question.

The social support measures proved useful, but were limited. In particular, were I undertaking such research again, I should be interested to include a brief assessment of social network structure from which could be derived parameters such as size, density, kin/friend boundary density and so on (Walker, Vachon and MacBride, 1977). The degree to which this network had been mobilised and specific measures of type of support received following the stressful event would be of great interest.

Finally, I now feel that the study would have been improved by more careful investigation of the mothers' use of health services. Although standard questions were asked about current treatment, a more detailed consultation history could have been taken. This would have proved interesting in examining hypotheses that women from dense kinship networks are less likely to seek professional advice, or that social support influences service utilisation (cf Miller and Ingham, 1976; Birkel and Reppucci, 1983). Including such questions would have been relatively economic and would also have made the research more directly

applicable to the concerns of service providers.

11.2 Summary of findings on paid employment

The findings of the study regarding paid employment and the effects of
other socio-demographic variables can now be drawn together by
reiterating the research questions from Chapter 1.

**Q1. Will an overall relationship between paid employment and mental
health be found in this sample of working-class mothers?**

There was only one, very modest, correlation of paid employment from a
wide range of mental health measures. This was the finding that
nonemployed mothers had greater self depreciation scores than the
employed. There were no other significant differences.

**Q2. Is paid employment associated with mental health measures only in those
mothers who are particularly at risk by virtue of poor social support or
having recently suffered severe life event stress?**

There was evidence that employment status was associated with mental
health only in mothers who were at increased risk of psychiatric disorder
by being in a severe life event category. Examining life stress as a
continously distributed variable also showed this effect. Figures 6.1 and
6.2 illustrate that the two employment status groups have different

thresholds at which symptoms become related to life event stress. The employed women at higher stress levels showed particularly low symptom scores on both the PSE and the BDI. This suggests that in normal circumstances, where paid employment is associated with adequate support, women who have suffered a severe stress are benefitted by employment.

There are many reasons why this might be so. Comparing paid employment to the homemaker role in terms of Jahoda's (1979) 'latent functions' of employment is instructive (Parry, 1983, p244). One important way in which, under stressful conditions, the homemaker role may be deficient is that it does not impose a structure on the working day. Such a structure has often to be created by the mother herself. We know from clinical observations of stress response syndromes (Horowitz, 1976) that severe stress is followed by a period of cognitive disorganisation characterised by intrusive preoccupation with the event. It is possible that the external structure of routines in paid employment functions to prevent this stress response from becoming overwhelming or uncontained, so acting as a distraction and attenuation. This is purely speculative, but would be an interesting hypothesis to address in future research.

Not all women with a severe event found employment to be protective, however. When social support deficits were also taken into account, a 'cross over' effect was found, with employed mothers at the highest levels of social adversity due to poor support in addition to a stressful event showing particularly high symptomatology. This was interpreted in terms of an 'overload' effect, although caution is advisable in accepting the

finding because of the small numbers involved in the crucial cell. This was despite a sampling procedure designed to contact relatively more of such women, so that it is easy to see why such an effect could be missed in random samples. The finding therefore requires replication, perhaps with a study specifically designed to make this comparison.

Q3. Are any associations found between paid employment and mental health net of age and difficulties with money, housing and childcare?

The findings described above were not attenuated by age, housing or childcare difficulties. However, accounting for the variance due to money difficulties did reduce the significance of the interaction. This may have been because this particular difficulty was associated with employment status itself. It suggests that in considering the role of paid employment in psychological terms (as above), one must not forget the parsimonious interpretation that financial hardship is the major influence on well-being. Certainly, many of the mothers who were interviewed were suffering relative poverty which, as ably shown by Townsend's classic study (1979) severely restricts the options and resources available to the mother under stress.

Q4. Is the care of a preschool child associated with lower mental health scores?

In the present sample there was no evidence that mothers with preschool children had greater psychological distress. As already discussed, this

finding is consistent with results obtained by other workers and may indicate that the important distinction is not between having preschool and school age children, but between caring for a young baby or a toddler.

Q5. Do single mothers have lower mental health scores than married mothers?

Single mothers had higher negative affect scores but on all the other mental health measures were not significantly more distressed than the married mothers. This was a rather unexpected finding which I discussed in 6.4 in terms of the tendency of single parents in the sample to live with their family of origin rather than alone. This interpretation is consistent with the work of McLanahan et al. (1981) who explored social network structure, social support and psychological well being in single parent families from different socioeconomic groups. They found that reuniting with the family of origin was most common in working class mothers in contrast to the middle class, and that it had some social support advantages, particularly in the early years of childcare. The relative disadvantage was in terms of forming non-kin relationships, which may be important in the longer term for developing new attachments. However, it seems that the short term benefit of reuniting with (or in some cases, never leaving) the family of origin may account for the lack of marital status effects in the present sample. It must also be remembered that for the whole sample, the salience of the mother-daughter relationship was very striking - the respondents often named their mothers as a confidante and over a quarter of the sample saw their mothers daily.

Nearly 80% saw their mothers more than once a week. Given these norms, the position of the single mothers in the family home is not particularly unusual even compared with the married women.

Q6. Do employed mothers have more liberal sex role attitudes than nonemployed mothers?

There were no significant differences found between employed and nonemployed mothers in their attitudes to sex-related roles. This is not consistent with findings of other workers (Molm, 1978; Ferree, 1980; Stafford, 1984). The discrepancy may have been partly due to differences in samples. The present sample was far less heterogeneous, having no full time employees and all mothers having a child between 4 and 7 years. It is possible that mothers with older children, particularly those in full time employment, may demonstrate this effect more readily.

Q7. Is there a significant interaction between sex role attitudes and employment status in relation to mental health (i.e. do those mothers whose employment status is concordant with their sex role beliefs have better mental health scores)?

As discussed in Chapter Seven, this was found in the present sample, but only with regard to anxiety levels, not depression. The specificity of the effect with regard to anxiety was demonstrated both within the current study and replicated in a completely different sample kindly 'loaned' for

this purpose by other investigators. I felt it was important to attempt the replication as I was sceptical of the result and concerned that it may have been a fluke. This is always a danger when examining weak effects across many different outcome variables.

Q8. Do employed mothers express more satisfaction with their domestic role than nonemployed mothers?

The home role satisfaction scores of the two employment status groups, although in the predicted direction, were not signficantly different. There was some evidence that the relationships between home role satisfaction and well being were stronger for the nonemployed.

Q9. Among employed mothers, is job satisfaction and the conflict between home and employment roles associated with mental health?

Only one mental health measure (Beck) revealed a significant association between job satisfaction and well-being for employed mothers, although the 'r's for anxiety and negative affect were approaching significance. In contrast, the measure of dual role conflict (also termed 'interaction strain' in 5.4) showed a more consistent relationship to psychological distress, including PSE symptom scores. I discussed this in terms of the salience of the childcare role for the women in the present sample, and the importance of having a job which was flexible enough to fit well with parental responsibilities. This was certainly the aspect of the job most often spontaneously mentioned by mothers as either a positive feature

(e.g. "This job suits me because they let me have time off in the school holidays and I can make it up later on") or a source of stress (e.g. "I have to make three bus journeys to get the children to playgroup and school and then go across town to work. I get very tired of it.")

Q10. **Is there an association between life event stress and psychological distress in the present sample and what is the magnitude of the effect?**

There was a modest association of life event stress with some of the mental health measures in the present sample. This effect was most marked for the PSE, and was also apparent for the BDI (dichotomous form only), Zung (continuous form only) and Negative affect scales. Anxiety, self esteem and positive affect were not associated in the present sample.

Q11. Are the psychiatric cases at the threshold (ID=5) more similar to non-cases than definite cases in terms of the continuously distributed measures of depression, self-esteem and cognitive style?

There was no evidence that the threshold cases were more similar to subthreshold noncases than the definite cases for any of the mental health or cognitive style measures. If anything, the reverse pattern was found in that ID5 cases were markedly more severely distressed than the non-cases. It was also possible to derive a function from the

combined item pool which made a clear discrimination between cases (definite + threshold) and non-cases.

Although severity of symptomatology is clearly not the only consideration in distinguishing transient dysphoria from conditions of clinical significance, these analyses do suggest that the case threshold used in community surveys is set at a meaningful rather than arbitrary point. A clear cut 'natural' distinction between 'ill' and 'not ill' groups however, was not supported by the data discussed in Chapter Ten, which tended to support a continuum model.

Q12. **Is there an association between social support and psychological distress independent of life event stress?**

The evidence from Chapter Eight is an uniquivocal 'yes' to this question. Consistent relationships, unqualified by interaction effects, were found across all measures for both forms of social support, even after accounting for the effects of life event stress and five other social factors.

Q13. Is there evidence of an interaction between life event stress and social support beyond that expected from the additive model of their joint effect?

Some evidence of such an interaction was obtained, and would probably have been stronger with more stringent exclusion of chronic cases. The pattern of case rates was consistent with the buffering hypothesis using this definition, especially for expressive support and Brown's 'intimacy' criterion. However, the issue of buffering still requires more careful attention because although the relationship between life event stress and disorder was much stronger in the vulnerable group, there are a number of ways in which synergy can be falsely inferred.

Q14. Is there evidence of an interaction between life event stress and social support beyond that expected from the multiplicative model of their joint effect?

There was no evidence of interaction using the more stringent criterion of interaction in either logistic analysis of contingency tables or multiple regression with forced entry following the main effects.

The issue of stress buffering requires more discussion here, particularly since the publication of the Cohen and Wills (1986) review of the hypothesis, which was not available when Chapter Eight was written. These authors have commendably recognised that the question of stress buffering will not yield to brute empiricism but needs to be approached from a

sound basis in theory. Given the conceptual confusion in this field, their review is a landmark. Their basic proposal is that where the type of support measured is structural, diffuse or global, main effects will be found since this is tapping stable social integration, which is only indirectly related to the provision of event-related support. Buffering will be demonstrated where the support variable is tapping specific provision of the type of support that matches the event stress (e.g. self esteem support). They go on to review existing studies in order to demonstrate that this is indeed the case. The evidence they accumulate is impressive and will allow future research questions to be formulated with more precision.

Having said that, it seems churlish to have criticisms of the review, but there are some points which need comment. Although the theoretical force of their argument is strong, results which seem inconsistent with their formulation seem to be glossed over rather quickly (e.g. Miller & Ingham, 1979). Furthermore they entirely neglect the issue of the statistical grounds for inferring interaction. Thus, Brown and Harris's (1978) results are cited as demonstrating buffering despite their not in fact doing so on a multiplicative model. I also feel they beg the question of mobilisation of support following a life event by dismissing such measures as Barrera and Ainley's Inventory of Socially Supportive Behaviors (ISSB; 1983) as 'confounded' with depression. The inescapable flaw in all support indices is that when comparing those who have experienced a life event with those who have not, they are measuring two different things; mobilised vs potential support. That there is a large

difference between expecting support and receiving it 'in the event' has been recognised by Eckenrode (1983) and has been confirmed by Brown et al. (1986) in their finding that being 'let down' by a close tie is an important factor in predicting onset following a life event.

How does the Cohen and Wills (1986) formulation hold up in the present study? Certainly, such buffering effects which were found were with the expressive measures rather than the instrumental one. On the other hand the expressive measure also demonstrated a consistent main effect across all mental health variables. This could be because of the way ESS was derived in terms of structural characteristics of the respondent's social network (eg the time log) rather than perceived support.

Future research should move on from testing for interactions in surveys, which can only be at best a crude test of stress buffering. All the indications point to the need for more and better theoretical formulations of the stress buffering process so that better data can be obtained to address more precisely formulated research questions.

Q15. **Are the data in the present study consistent with the 'vulnerability' (diathesis-stress) or the 'mixed aetiology' model of the role of negative cognitive style in relation to social stress?**

This question is closely related to Q14, since the individual's role in the stress process, and how cognitions affect, for example, social

support perceptions and mobilisation, have as yet been very inadequately researched. Unfortunately, the present study can only make a marginal contribution having not been designed to address these issues.

So far as we could examine alternative models, there seemed rather more support for the 'mixed aetiology' model than the 'vulnerablity' model, in that for three out of four analyses, the depressed women with the most negative cognitive style were found in the low social stress group. Of course, as previously recognised, this result is only suggestive, since the present study has no way of measuring cognitive style prior to the onset of depression. Nonetheless, there was a clear trend for the women who were depressed following a life event to have a more normal cognitive style that those who had no clear precipitant, a result not predicted by the vulnerability model. However plausible, this model is not supported by the evidence in a wide range of studies (Brewin, 1985). For example, Lewinsohn et al. (1981) found, in their longitudinal study in a community sample (n=998), that although negative cognitive style was associated with depression, it did not predict it:

"Prior to becoming depressed, these future depressives did not subscribe to irrational beliefs, they did not have lower expectancies for positive outcomes or higher expectancies for negative outcomes, they did not attribute success experiences to

external causes and failure experiences to internal causes, nor did they perceive themselves as having less control over the events in their lives." (p218)

The possibility that there is more than one route (for example, one stress-related and one intrapsychic) to becoming depressed would be worth investigating further.

Q16. Do individual differences in cognitive style correlate with psychiatric case status irrespective of social stress category?

There was also support for the symptom model, in that irrespective of life event category, depressed women showed lower Responsibility for positive Outcomes (RPO) scores and higher self-depreciation scores.

11.4 Illustrative case vignettes

In reading research reports, such as the present one, about 'respondents' (or even, in some, 'subjects') one is often struck by the degree of abstraction and detachment they display. Particularly so, perhaps, with epidemiological surveys, where one is concerned with risk factors affecting whole populations rather than any one individual. Hence, research findings framed in terms of 'variables', 'interactions' and 'caseness' fail to convey the reality of the processes in the individual women's lives. One wishes to grasp what the findings mean in these terms. The danger is of falling into the trap of trying to extrapolate from epidemiological risks

to prediction for the individual. However, for the present concluding discussion, and for illustrative purposes only, it seems appropriate to give three brief case vignettes relating to the major findings. These have value if only to remind us that we are dealing with human lives not figures on a page, something which, as clinicians, we cannot afford to forget.

The brief details which follow are taken from the interview notes. All three women were identified as 'depressed' at interview. The first had a severely threatening life event, was employed outside the home and lacked social support. She therefore illustrates the one group in which paid employment was found to be associated with psychological distress. The second is an unemployed mother in a high event category but with adequate support. It was in these circumstances that nonemployment was found to be associated with PSE symptoms. The third is an example of depression occuring without clear social precipitants as the mother had no major life stress and good support, as discussed in Chapter 9. Each mother's interview record was chosen at random from all those who fell into each illustrative category.

Vignette 1. Tina A.

Tina A, aged 28, has been married nine years and has two children, a boy of 8 and a girl of 5. She left school at 16 and worked in a factory full time and then as a waitress. She has worked in her present job as a hospital cleaner (16 hours per week) for two years. Her husband is a

council worker in a manual job. She was brought up by her natural parents, but lost her father at the age of 13. Seven months before interview her mother died of cancer after a long period of illness involving severe confusion and paranoia. Prior to her mother's death she had spent two or three hours with her six days a week, having thus lost contact with many old friends. She works nights 2 days every week and so when this rota clashes with her husband's working hours, she loses two complete sleep sessions each week in order to care for the children.

She scores below average on instrumental support, having no-one to look after her children in the evenings and having no way of obtaining money in a financial crisis. Although she has a confiding relationship with her husband, the weekly time log shows that they have little opportunity to spend time together. She reports high satisfaction with her domestic role and also with her job role, except for the item "I only do my job because I need the money". She does not perceive much role conflict between her domestic and job commitments, except that she is not sure if her husband approves of her working outside the home. She has traditional sex role attitudes.

She reports that for five months she has felt intermittently depressed and anxious, with fluctuating severity of symptoms. At interview she reported depressed mood, loss of interest, inefficient thinking, hopelessness, retardation, panic attacks, headaches and tiredness. She is taking anxiolytic medication. Despite her symptoms, her self-esteem is high and her cognitive style not particularly negative.

Vignette 2. Sharon B.

Sharon B is a 34 year old mother of five children aged between 5 and 15. She lives with her permanent boyfriend, who has been unemployed for more than a year. Sharon had left her own part-time job a year before interview because of poor working conditions. She reported dissatisfaction with her home role and she held traditional sex role attitudes. She has eight siblings, but sees only three of her brothers regularly. She reports a confiding relationship with her boyfriend. She has not seen her mother for two years, and has been estranged from her father (aged 75) for eight years, following a family row.

In the year before interview she had heard someone make a disparaging remark about her neglect of her father, whom she believed was being looked after by her sister. She decided to contact him. She found him living alone in appalling conditions. He was very neglected, the house was in a dangerous and filthy condition. For example, his dog and four puppies had not left his room for four weeks. All the furniture, carpets and curtains had to be burnt and she visited him three hours per day for a month to clear up. She received supportive help from her brother and her husband.

At interview she reported restlessness, nervous tension, depressed mood, hopelessness and delayed sleep. Her self-esteem was low.

Vignette 3. Lorraine C

Lorraine C is a 33 year old mother, married to a warehouseman, with two boys aged 3 and 4. She left school at 16 to work in a factory. At 20 she moved into a catering job until the birth of her first child, then resumed her employment eighteen months before interview (15 hours per week). Her parents, two brothers and four sisters, live in a town 40 miles away, where she visits them once a month. She is well supported instrumentally and was also rated 'high' on expressive support, having an intimate and confiding relationship with her husband and the availability of other confidants.

In the year before interview she had experienced a number of minor life events concerning a family feud in which she was not directly involved. Her most serious event was one month before interview when her husband was temporarily put on a three day week, with a 10% loss of earnings, which delayed a planned kitchen improvement. She also reported a child care difficulty with her three year old son, whom she perceived as hyperactive and extremely demanding. This difficulty was, however, rated low by the contextual team on the basis of objective evidence. She reported moderately high dissatisfaction with her home role, but satisfaction with her employment role and low role conflict. She had liberal sex role attitudes.

She reported high negative affect, depressed mood, free floating anxiety, sleep problems, exhaustion and nervous tension. For the previous month

she had a constant feeling of "cold, empty unhappiness" for no apparent reason. Her self-esteem scores were low, self depreciation high and she had a marked tendency to blame herself for misfortunes.

11.5 Future research directions

Future research can fruitfully continue to explore questions about the effects of paid employment on mother's mental health, but there is no need to make further global comparisons between employed and nonemployed mothers. Further work in samples of high risk mothers to investigate the functions of the employment role does seem to be indicated.

More broadly, it seems to me that hypothesis testing epidemiology using survey methods needs to be rooted in better theoretical formulations of the processes under study. This is particularly so if we wish to examine the role of the individual in the stress process. This is not merely a matter of carrying another paradigm, for example, the coping model or personality theory, into surveys by including measures of coping or 'personality'. Developments are needed at the theoretical rather than the measurement level.

An example of such a thoughtful approach is provided by Oatley and Bolton in their 1985 Psychological Review article, where they formulate a social-cognitive theory of depression in reaction to life events. Their fundamental postulate is that

"the onset of depressive symptoms depends on the relation between a person's role expectations and the fulfilment of those expectations by others who take part with her or him in role relationships."

In this formulation, a triggering life event is a disappointment of goals to which the person is implicitly committed and by which that person has defined her or his own worth, but which are dependent on the participation of other people. The typical life event involves removal of the role-other's participation and a collapse in the valuation of self. Depression occurs with a discrepancy between the behaviour of a role-other and expectations from the internal model of the other. A role schema is continually checking this out. There is an inner dialogue which rehearses proposed actions and their comparison with the rules represented in the models of self and other. This cognitive diaglogue, which can be attended or unattended, becomes salient when self definition goals are threatened. Dysphoric emotions result from a mismatch of goals with the actions of the role-other, and if a mismatch is intense or repeated frequently this can lead to psychiatric illness.

This approach repays careful study, since it is consistent with a broad range of clinical theories of depression, including the Kohutian model of the self which Phil Mollon and I discuss in relation to the protective function of depression (see Appendix C). It also explains why, in certain circumstances, social support deficits can be classed as provoking agents. With regard to the stress buffering debate, their view is the matter cannot be resolved without examining the individual's self definition goals and

plans for fulfilling them.

Such theoretical formulations will enable researchers to ask more precise research questions, and will also influence the development of measures. For example, operationalising a 'fuzzy' concept such as 'social support' is inevitably more difficult than a precise one (such as whether there is a match between event type and self definition goals). The more precise questions tend also to be more interesting. I believe, and hope, that the field of psychosocial stress processes will move in this direction over the next decade.

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APPENDIX A

Paid Employment and Women's Psychological Well-Being

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Research by psychologists, psychiatrists, and sociologists is examined within a three-component conceptual framework. This suggests that the association between employment status and psychological well-being is mediated by a woman's occupational involvement, the quality of her nonoccupational environment, and (if she has a job) the quality of her employment relationship. These three features are operationalized at the group level and at the individual level to show that in certain circumstances psychological well-being is significantly associated with having paid employment but that this association is not a general one. For example, the relationship is strong for single women but rarely observed for married women in general; it is more likely to be found in groups of working-class women than in middle-class samples. The conceptual framework is advocated for more sophisticated research in this area.

It is now clearly established that being unemployed is associated with low psychological well-being in men. Unemployed men may lose opportunities for task achievement, they are liable to financial hardship, they may have reduced contact with important social networks, their job-seeking setbacks can lower self-esteem, and their day may lack the temporal structure and purposefulness of a working life. Men without paid employment tend to have elevated scores on measures of psychological distress and minor psychiatric morbidity (e.g., Dooley & Catalano, 1980; Hepworth, 1980; Warr, 1978, 1982).

For women, however, the relationship between employment status and psychological well-being is not yet clear. This is for several interrelated reasons. First, researchers have tended to take an undifferentiated approach, examining women in general or samples drawn without regard for life cycle stage, socioeconomic status, domestic setting, and other features. This single-variable focus (looking only at employment status) is important as one part of the collective research endeavor, but it needs to be complemented by multivariable investigations to identify relationships that remain hidden at the single-variable level. Second, there has been a tendency to use excessively simple measurement procedures, usually brief questionnaires to obtain self-reports of current state. More complex interview investigations are difficult and expensive but are required in order to go beyond the rather modest questionnaire studies that are typical of this field at present. Third, issues of temporal sequence and causal relationship have often been ignored in studies of one point in time. Observed relationships between employment status and well-being in a cross-sectional inquiry may reflect several causal patterns, including the simple effect of paid employment, processes of self-selection whereby persons of a certain level of well-being become and remain unemployed, or some combination of interactive influences.

Associated with these limitations is a notable diversity of samples, outcome variables, and historical settings. For example, research in the United States and the United Kingdom in the 1950s and 1960s was provoked by a strong interest in the sociological and psychiatric effects of the growing num-

bers of working mothers. Investigations covered a range of issues such as emotional and intellectual development of children and husbands' marital satisfaction, often including an aspect of women's well-being as one minor component of a more extensive project. Results of such research are limited in two respects: in terms of their historical specificity and in terms of their unsophisticated design and measuring instruments.

This article has three aims. First, we wish to bring together and interpret a scattered literature of research by psychologists, psychiatrists, and sociologists. Second, we seek to identify ways in which this research can move forward more rapidly. Third, we aim to set previous research and future possibilities within a conceptual framework that recognizes a range of important variables beyond mere employment status. This third objective must be tempered by the relatively unsophisticated nature of much earlier research: The complexity of our framework has to be restricted if it is to map onto the studies under review. On the other hand, to be useful it must advance beyond these studies, so in practice the level of conceptual detail that we shall introduce is more than that required for interpretation of most published investigations.

The Conceptual Framework

Women's psychological well-being is influenced by many factors, of which employment status is only one. Other potentially important variables include marital status, socioeconomic status, number and ages of children, marital satisfaction, social difficulties, availability of social support networks, and recent life history (e.g., Bebbington, Hurry, Tennant, Sturt, & Wing, 1981; Brown & Harris, 1978; Pearlin, 1975; Radloff, 1975). In order to make predictions about the effect of employment, these other variables are here placed under three principal headings, namely, a woman's occupational involvement, the quality of her nonoccupational environment, and the quality of her employment relationship. We first examine each of the principal factors in turn and then illustrate their probable combined effects.

Occupational Involvement

Most empirical studies have been deficient in failing to discriminate between groups of women with different degrees of involvement in the labor market. For example, single women without children are as likely to want paid employment as are their male counterparts, whereas mothers of young children often have no occupational aspirations for that period in their lives. Married women's participation in the labor market is itself likely to vary with stages in the family life cycle (e.g., Waite, 1980). Furthermore, cultural and educational features (for example, ethnic group membership and level of academic qualification) may influence the extent to which paid employment is felt to be socially and personally desirable. Reasons for a woman's commitment to the labor market can be of several kinds, both financial and nonfinancial, and it is of course important in some research settings to identify specific motives. In the present context we mainly restrict attention to occupational involvement in general: We expect that women who strongly want a job for whatever reason will thereby benefit most from having paid employment. It would be wrong, however, to see occupational involvement solely in financial terms. A woman who had no personal desire to work outside the home and felt constrained to continue employment merely because of financial hardship would not be designated within our framework as having high occupational involvement.

Occupational involvement is likely to be revealed as important in mediating the relationship between employment status and psychological well-being at two levels of analysis. At the individual level, it has been shown that measures of personal work involvement are for men significantly associated with the negative effect of unemployment: Unemployed men for whom paid employment has strong emotional salience are likely to suffer most from its absence (Warr, 1978). At the group level, we expect to observe differences in the effect of employment status between groups with different average levels of commitment to the labor market, for example, single women without children in comparison with married

women with young children. Researchers have often failed to separate data from groups distinguished in these terms, and we look further into this possibility below.

A difference between the meaning of the label "unemployed" for men and for women requires emphasis here. In most Western countries almost all men without jobs register themselves as "capable of and available for employment." Registration typically entitles them to some form of unemployment benefit, which is also available to some but not all women. Despite substantial increases in women's labor force participation in recent years, many women without a job do not register themselves as unemployed, often because their domestic situation or employment history render them ineligible for benefit. This means that women without a job are not all "unemployed" in the sense that most men without a job are "unemployed." Some women without paid employment are seeking this, whereas others are not. Unfortunately, this distinction has been inadequately drawn in most empirical research to date.

Quality of Nonoccupational Environment

The second differentiation in our conceptual framework is in terms of the quality of a woman's life outside employment. Women whose psychological, social, and financial needs are already met in the absence of employment are not expected to gain from taking a job. Conversely, for women living in particularly adverse environmental conditions and already psychologically at risk, a positive relationship between paid employment and psychological well-being is more likely to be observed.

There are two ways in which paid employment might be beneficial in this latter situation. First, a job may directly provide what is lacking in the nonoccupational environment, for example, where the home does not give enough adult company or other social support, where financial resources are extremely scarce, where routine and temporal structure are lacking, or where activities outside the home are seriously restricted. The second type of influence is where employment does not directly counteract a poor home environment but is of benefit in giving respite from domestic stress. Examples of this are where the marital relationship is severely disturbed, where housing conditions are extremely poor, or where child-care demands are overwhelming.

General health status (rather than psychological well-being) has been viewed in a similar manner by Nat anson (1980). In examining self-reported general health among American women aged between 45 and 64 years, she suggested that health benefits from employment arise only for women who are otherwise deprived of opportunities for self-esteem and social support. A similar view of employment and illness has been take by Waldron (1980); findings for psychological health are reviewed below.

Quality of Employment Relationship

The third factor within our conceptual framework is the quality of a woman's employment relationship. Features of jobs that affect employee reactions have been extensively studied (e.g., Warr & Wall, 1975), and it is obvious that some workers have more rewarding employment than others. Even in a case where the previous two factors suggest a potential beneficial effect of employment, a woman who actively dislikes the content and context of her occupational role is unlikely to gain from it in psychological health, whereas one who finds her paid employment rewarding may well experience more widespread psychological benefits.

A second aspect of the quality of an employment relationship is the extent to which job demands conflict with a woman's nonoccupational role, yielding strain in coping with the interaction between the two roles. As with occupational involvement, this is likely to vary with life cycle stage, for example, with single women without children having less interaction strain than married women with dependent children. In the latter group the strain that is experienced may also depend on the attitude of the husband and whether a mother has the social resources available to assist with child-care arrangements.

Illustrative Predictions

The three components of our conceptual framework are not wholly independent of each other. For example, an adverse non-occupational environment might lead to heightened occupational involvement, as could a good employment relationship. Furthermore, financial features are potentially to be found in each component: as one of several contributors to occupational involvement, as an aspect of the nonoccupational environment, and as one reflection of an employment relationship.

We predict that paid employment will be highly beneficial where the three factors combine univalently: occupational involvement is high, the nonoccupational environment is adverse, and a woman's paid employment is attractive to her. Socially disadvantaged women with school age children who have enjoyable part-time employment provide one example of this. A second example is that of single women with high occupational involvement, domestically restricted to the parental home, and experiencing high job satisfaction.

The present framework suggests that paid employment is likely to be moderately beneficial where two of the three factors point in this direction, for example, where occupational involvement is high, nonoccupational circumstances are adverse, but the quality of the employment relationship is low. For instance, where socially disadvantaged women with preschoool children have chosen full-time employment, strain due to overload from the two roles may reduce the potential beneficial effects. A second case of a predicted benefit that is only moderate is where the quality of a woman's nonoccupational life is already high, for here we expect a "ceiling effect" on well-being.

We do not expect paid employment to have a significant effect on psychological well-being when two of the three factors combine against a positive outcome. This is the case, for instance, when, although the nonoccupational environment is adverse, occupational involvement is low and the quality of an employment relationship is poor. An example is a socially isolated mother,

who, other things being equal, would be expected to benefit from employment. Nevertheless, if she has no personal desire to work outside the home and has a tedious job or one that requires difficult child-care arrangements, we predict no psychological gain from paid employment.

It is possible to predict that employment would have deleterious effects when all three factors pointed to that result, for example, where mothers-by-choice in good marriages have menial or badly paid jobs that cause substantial child-care problems. These cases, however, tend to be relatively infrequent because such women are likely to withdraw from employment, and we expect that the association between paid employment and well-being will generally vary from zero to positive. This is also implied by a second form of self-selection: Women who are themselves psychologically distressed are less likely to present themselves or be accepted for jobs. This general positive expectation, however, recognizes that occupational pressures can in certain cases yield marked personal strain for some employed women.

Measuring the Variables

It would be desirable at this point to describe how investigators have measured each of the three sets of variables in our conceptual framework so that we can test predictions against published findings. The framework, however, has moved ahead of the literature, in that few studies in the area of this article have directly examined the factors introduced here. We must, therefore, seek within the previous literature indirect measures of occupational involvement, nonoccupational environment, and quality of employment relationship. In the first two cases it is possible to suggest proxy indices in terms of membership of certain groups, as follows.

Occupational Involvement

Capitalizing on common demographic categorizations, we may suggest that in general terms our first factor, occupational involvement, will vary with a woman's marital

and parental status. It is thus useful to examine the literature in terms of four principal groups of women: single or married, with or without children at home.

We include within the "single" category women who are separated, divorced, or widowed, although when research has examined one subgroup separately, these findings are presented on their own. "Married" women are best viewed in this context as those who are living with a man whether or not the two are legally married. Parental status is here classified in terms of having or not having children at home. More complex assessments are of course possible, but this initial level of detail appears most suitable in relation to the categories that have been used in the literature.

Group 1: Single women with no children at home. Single women are by definition in the role of principal wage-earner for themselves, and in this first category they have no children requiring care in the home. The group contains single women of all ages who have not borne children as well as older single women (including the separated, divorced, and widowed) whose children have left home. We assume that women in this category on the average have the strongest occupational involvement, and we expect that psychological and psychiatric correlates of employment status will parallel those for male principal wage-earners.

Group 2: Married women with no children at home. This second group also contains both women without children of any age and older women whose children have left home. The homemaker role of Group 2 married women is less demanding than for some (Group 4, for example), and we expect this group on the average to be of intermediate occupational involvement.

Group 3: Single women with children at home. This is a relatively small group of women, who do not appear separately in any of the studies reviewed below. We include it here for completeness.

Group 4: Married women with children at home. Our expectation is that the greater proportion of women with children at home are emotionally involved in the parenting role (which is not to deny that they sometimes find it tedious or difficult), and that

in general this takes priority for them over paid employment. Overall, we expect this group to be of relatively low occupational involvement, especially when their children are young.

Investigators have not always analyzed their material in terms of the four groups set out here, so we must also consider five combinations of categories:

1. *Groups 1 and 3* together cover single women in general, irrespective of parental status;

2. *Groups 2 and 4* together cover married women in general, irrespective of parental status;

3. *Groups 1 and 2* together cover all women without children at home, irrespective of marital status;

4. *Groups 3 and 4* together cover all women with children at home, irrespective of marital status; and

5. *Groups 1, 2, 3, and 4* together cover women in general, irrespective of parental and marital status.

In identifying these groups as likely to vary in average levels of occupational involvement, we do of course recognize that they may also differ in other features associated with well-being. The classification provides a rough and imprecise index of occupational involvement, but no better measure is available for the retrospective application of our conceptual framework to published research.

Quality of Nonoccupational Environment

In the absence of more refined measures in the large majority of studies, and despite its obvious limitations, we may for the present take socioeconomic status as a general guide to adversity of nonoccupational environment. For example, Brown and Harris (1978) reported that negative life events, social difficulties, marital breakdown, and early loss of mother were all more common in a working-class population than among middle-class women. Where information on socioeconomic status is provided in the literature, we have used this to make retrospective inquiries in terms of the conceptual framework set out above. As with occupational involvement, we hope that more ad-

equate indices will be introduced into future research.

Quality of Employment Relationship

A small number of studies have used direct measures of our third feature, for example in terms of job attitudes and reported interaction strain. We describe these later.

Indices of Psychological Well-Being

In parallel to the development of a framework to bring together principal sets of variables, a classification of outcome measures is also required. We use the following categories, ranging from those with clear medical implications to everyday assessment of personal happiness.

Suicide and attempted suicide (Type A). It is of interest to learn whether having a job is significantly associated with the probability of women committing suicide, although the causal implications of such a finding would require additional examination. Studies of *attempted* suicide in relation to employment status would also be valuable, but these do not appear to have been carried out.

Diagnosed psychiatric illness (Type B). In this class of measures are psychiatric diagnoses on presentation to general practitioners, referrals to consultants, admissions to hospitals, and recorded rates of recovery with or without treatment. Such measures have the advantage of systematic assessment of clinically important conditions, but studies based on them may be limited by sampling bias: Subjects in the research are self-selected in terms of their own decisions to seek and continue medical treatment and are also subject to variations between doctors, institutions, and communities in diagnosis and referral.

Psychiatric morbidity (Type C). In this category fall screening measures that have been validated against diagnostic criteria, both in terms of symptom content and in their identification of a minimum "case" threshold. For example, the Present State Examination (PSE; Wing, Cooper, & Sartorius, 1974) assesses through interview the degree to which a range of psychiatric symptoms is present. It yields an index of overall severity and an approximate classification into one of the functional categories of the International Classification of Diseases. The PSE has been shown to have good validity against more extensive psychiatric examinations (e.g., Wing, 1980).

Another validated screening measure is the General Health Questionnaire (GHQ; Goldberg, 1972), which gathers information about a range of recent experiences and processes and combines these into a single overall score. This has also been shown to be an effective guide to minor psychiatric morbidity in the general population (e.g., Henderson, Duncan-Jones, Byrne, Scott, & Adcock, 1979). The PSE and GHQ have been found to have substantial convergent validity with each other as measures of nonspecific psychological disturbance (e.g., Finlay-Jones & Murphy, 1979). In the research to be described, Type C measures have been used in population surveys rather than with clinical samples, so, unlike studies with Type B indices, they are free from possible bias due to variations in help-seeking behavior.

Psychological distress (Type D). There are many measures that have some content in common with those of Type C but that have not been shown clearly to separate potential psychiatric cases from those who are unlikely to be diagnosed as such. The Type D indices cover self-reported depression, anxiety, negative affect, emotional ill-health, psychosomatic symptoms, and aspects of low self-esteem. Illustrative measures from studies to be summarized below include the 22-item scale of psychophysiological disorder described by Langner (1962), the 20-item depression scale from the Center for Epidemiologic Studies (CES-D; Radloff, 1977), and the five-item negative affect measure of Bradburn (1969).

Life satisfaction or happiness (Type E). Other investigators have relied on brief measures of overall life satisfaction or happiness. The latter is often assessed through a single question, for example, "Taking all things together, how would you say things are these days: would you say you are very happy, pretty happy, or not too happy?" (e.g., Campbell, Converse, & Rodgers, 1976). Life satisfaction may be tapped through separate questions about specific domains (marriage,

income, community, etc.), responses to which are summed (e.g., Nye, 1963), or by a single report of how satisfied people are with the way they are spending their lives (e.g., Ferree, 1976).

Positive well-being (Type F). Many measures of the previous types assume that well-being is unidimensional, running from, for instance, extreme unhappiness to extreme happiness. A complementary view is that negative well-being does not necessarily exclude positive experiences, so researchers should strive simultaneously to measure both positive and negative states. This view is most clearly identified with Bradburn (1969), whose measures included a five-item scale of positive affect, scores on which were found to be uncorrelated with those of negative affect. In view of the argument that women's paid employment opens up the possibility of new social contacts and task achievements, positive well-being deserves more attention in this area than it has received so far.

Results from 38 Studies

We have located 38 published investigations in the area of this article and we next review these within the conceptual framework and outcome classification suggested above. Some research designs have been limited or misguided, and we point to a range of possible improvements in the final section of the article.

Many studies have treated women as an undifferentiated category, and these are described first, as a backdrop to tests of the more precise predictions that are possible for specific groups of women. Some of the studies appearing under the first heading have also yielded more focused analyses (on single women only, for instance), and those more specific results are described in the appropriate section below.

Groups 1, 2, 3, and 4 Together: Women in General

Two studies of women's suicide in relation to employment status have recently been published. Results are similar to those from earlier research, where men committing suicide are found disproportionately likely to be unemployed. Cumming, Lazer and

Chisholm (1975) examined the potentially protective effect of having a job on women's suicide rates in British Columbia, Canada, between 1969 and 1973; the population at risk was around 285,000 employed and 500,000 unemployed women. Women with paid employment were significantly less likely ($p < .05$) to commit suicide, this difference being greater for married and widowed women compared with unmarried and divorced women. A significant interaction ($p < .01$) between age and employment status was also recorded: Differences between the suicide rates of employed and unemployed groups were greater for younger women. This type of epidemiological inquiry was supported by Shepherd and Barraclough's (1980) detailed case study of 35 British women suicides and 70 matched controls who did not receive any psychiatric treatment. The suicides were significantly more likely ($p < .01$) to be unemployed, but the authors emphasized that this should be viewed in terms of the suicides' prior mental illness that "at once stimulated in them suicidal thinking and at the same time took away from them an effective protection against suicidal behaviour" (p. 476).

Two studies have used Type B measures (psychiatric diagnoses) in groups of women undifferentiated by marital or parental status. Mostow and Newberry (1975), in a study of working-class samples, compared the rates of recovery from diagnosed depression of 21 employed women (half-time or more) against those of 21 matched homemakers, defined as those working less than half-time or not at all. (Note the problematic definition of employment status here; we return to this issue later.) The employed group were significantly less depressed ($p < .05$) than were the unemployed after 3 months, although both were taking antidepressant medication. This led the authors to suggest that "an outside work role offers depressed women some emotional support and protection" (p. 547).

An inquiry by Roy (1978) into British general practitioners' referral to hospital of out-patients suffering from depressive neurosis supported this conclusion for working-class but not for middle-class women. Of 50 depressed working-class referrals, 42% had

a job (part time or full-time) compared with 80% of the matched controls ($p < .001$). For 34 depressed middle-class referrals, 88% were employed compared with 76% of the controls (not significant). Other factors associated with referral as depressed included having a poor marriage and a lack of close confidants, but these factors were not examined as possible moderators of the relationship between employment status and depressed state.

Systematic community investigations to identify those needing treatment (irrespective of whether they seek it) are required to complement those out-patient studies. Two substantial projects have used the Present State Examination (a Type C measure in our classification) among women in the same area of London (Camberwell). In the first of these, Brown and Harris (1978) examined the correlates of psychiatric illness in 458 middle-class and working-class women aged between 18 and 64 years, who were selected through a random household sampling procedure. Thirty-seven women were defined as recent onset cases of depression, and the authors recorded significant differences between the onset cases and the controls on four nonoccupational features: (a) the number of recent severely threatening life events (mainly bereavements and other serious losses) or major social difficulties, (b) the lack of an intimate relationship with spouse, (c) the loss of mother before the woman was aged 11, and (d) the presence of three or more children under 14 at home. For the sample as a whole, having paid employment (full-time or part-time) did not significantly reduce the probability of a woman becoming depressed in the past 12 months (6% of employed women were onset cases compared with 12% of nonemployed women). For women with provoking agents (the first feature above) who were vulnerable in terms of features (b), (c), and (d), however, paid employment did significantly reduce the risk of depression (13% against 30%, $p < .05$).

In view of possible socioeconomic status differences in this relationship, we might ask whether the overall nonsignificant effect of employment status varies between working-class and middle-class women. Brown (Note 1) kindly provided results of this unpublished

analysis, which indicate a significant difference ($p < .05$) for the former (8% against 20%, $N = 209$) but not for the latter (5% of both employed and unemployed middle-class groups are depressed, $N = 210$). This difference was observed after 39 *chronic* cases of depression were excluded, because among these, lack of employment could be a result rather than a cause of psychiatric disorder.

In practice, it was working-class women who were observed to experience more threatening life events and to be more vulnerable in terms of lacking a confiding relationship with their spouse, having lost their mother at an early age, and having three or more children under 14 in the home. The two presentations of the results (in terms of socioeconomic status and in respect of the four features examined by Brown and Harris, 1978) are thus compatible with each other, providing alternative descriptions of the way in which the nonoccupational environment influences the relationship between employment status and psychological well-being.

The second study of this kind was by Bebbington et al. (1981). In a sample of 169 women, 72 were employed full-time, 38 part-time (up to 30 hours per week), and 59 had no paid employment. The weighted proportions of psychiatric cases identified through the Present State Examination were 10, 8, and 25, respectively ($p < .025$). As the authors pointed out, however, this overall analysis in terms of employment status is confounded by marital and parental status because, for example, married women with children at home were more likely to be identified as cases irrespective of employment status, but they were also the group least likely to have a job.

What of socioeconomic status differences? Is the association between employment status and probability of being a psychiatric case stronger for working-class than for middle-class women, as it was in the Brown and Harris (1978) study? Bebbington (Note 2) very helpfully made available to us more detailed information, including the following weighted proportions of cases for full-time employed, part-time employed, and nonemployed women, respectively: middle class, 12, 0, 16 (not significant); working

class, 5, 13, 28 ($p < .05$). The pattern is the same in both these investigations, supporting the suggestion that the relationship between employment status and women's psychological well-being is mediated by the quality of the nonoccupational environment.

The question remains why Bebbington et al. (1981) obtained an overall effect of employment status when Brown and Harris (1978) did not. Differences between samples in terms of the present framework could be important here. Brown and Harris's sample (p. 353) included few single women (17% in Groups 1 and 3 above), whereas that of Bebbington et al. (Table 9) included 37%. In the former study 60% of the women (p. 353) had children of any age in the home (Groups 3 and 4 of the present analysis), whereas in the latter case only 36% had children under 15 in the home (Table 16). We have previously suggested on the basis of probable differences in occupational involvement that psychological well-being would be less closely linked to paid employment for women with children at home than for other women; relatively more of this group were present in the Brown and Harris study than in that by Bebbington and his colleagues. Another possible influence arises from a difference in the proportion of working-class women in the two samples (50% and 58%, respectively); associated with expectations about nonoccupational environment, paid employment has here been suggested as likely to be more beneficial in working-class groups.

Brown and Prudo (1981) reported data from a community survey using the Present State Examination in a rural environment: the Hebridean Islands off the west coast of Scotland. In this case paid employment was not associated with recent onset of depression in the 355 women interviewed. Of these women, who were of mixed socioeconomic status, approximately 65% had children living at home (Brown et al., 1977).

Seven reports of studies using measures of Types D and E applied to women in general (Groups 1–4 combined) have been located. Stopes-Roe and Cochrane (1980) studied women resident in British towns who had been born in India, Pakistan, or Ireland. (Of these, 91% were married.) No differences were observed on the 22-item Langner scale of psychophysiological disturbance between 97 women with jobs and 151 without jobs. Illustrative items from this measure ask whether a respondent feels "weak all over much of the time," is "bothered by stomach trouble several times a week," or feels "somewhat apart even among friends." Using the same index of psychological distress with a randomly drawn sample of 109 British women aged between 20 and 60 years, Cochrane and Stopes-Roe (1980) again observed no significant difference between those in paid employment and those without jobs ($Ms = 3.96$ and 5.44, respectively). A significant difference did, however, emerge ($p < .05$) in responses to a 30-item psychiatric symptom checklist, with employed women reporting fewer symptoms (Cochrane & Stopes-Roe, 1981b). In a further description of a community survey with the Langner scale, Cochrane and Stopes-Roe (1981a) reported significantly higher distress scores for British-born women without paid employment in comparison with those who had jobs ($p < .05$; $N = 43$ and 47, respectively; respondents were mainly working class). The not-employed category in this study, however, contained a mixed group of retired women, homemakers, students, and those who were unemployed and seeking work, so the results should be treated with some caution.

In an American urban community survey, Pearlin (1975) used an 11-item depression symptom scale (crying easily, feeling blue, poor appetite, etc.) and observed no differences between employed women and full-time homemakers; very few details are given. Keith and Schafer (1980a) used the same instrument in a community survey of 363 women in Iowa; depression scores were almost identical for women with and for those without jobs. Self-completion questionnaires in Bradburn and Caplovitz's (1965) study of 961 women in four small towns in the American Midwest included a single item to tap overall happiness (Type E in the present framework). No differences were found between women with and those without paid employment.

In summary of this first set of studies of

women in general, employment status and probability of suicide are related but not in any simple causal fashion; psychiatric condition may be associated with having a job in working-class samples and in specified vulnerable subgroups, but self-report measures of psychological distress and happiness (Types D and E) have least often been found to be related to whether or not a woman has a job. In no cases do women with paid employment emerge as having significantly lower psychological well-being than do those without a job.

Group 1: Single Women With No Children at Home

We expect a stronger association between the two variables in the case of single women without children; this group is more homogeneous and of relatively high occupational involvement. Stafford, Jackson, and Banks (1980) obtained General Health Questionnaire scores (a Type C measure) from 17-year-old British respondents who had left school with low academic qualifications. A substantial correlation was observed between employment status and the GHQ measure of psychiatric morbidity ($-.39$, employed people having significantly lower morbidity), and the pattern was very similar for men and for women. Banks and Jackson (in press) extended that investigation to carry out five further comparisons between employed and unemployed teenagers. In each case women without jobs were significantly more likely than were those with jobs to suffer from minor psychiatric disorder.

Gurney (1980) followed up 164 female Australian school-leavers (average age 16.5 years) and found that those who obtained work yielded significantly higher self-esteem scores (on a 10-item scale drawn from Rosenberg, 1965) than when they were at school ($p < .01$). Those young women remaining unemployed showed no significant change in self-esteem scores between school and unemployment. The difference in self-esteem between those with and those without jobs at the follow-up inquiry was significant at the $p < .006$ level, with employed women yielding higher scores.

Groups 1 and 3 Together: Single Women in General

Investigators presenting results for single women as a whole (Groups 1 and 3 together) report similar findings. Finlay-Jones and Burvill (1979) used the 60-item General Health Questionnaire in an Australian community survey; unemployed single women showed significantly greater psychiatric morbidity ($p < .001$) than did those single women who were employed (42% and 13%, respectively, were identified as probable cases; Ns = 38 and 96). The small subsample of single women in the study by Cochrane and Stopes-Roe (1980; see above) also yielded a large difference on the Langner 22-item scale: Ms = 3.21 and 8.38 for 14 employed and 8 unemployed single women, respectively. The overall difference in suicide rates between employed and unemployed women is also present in separate analyses of unmarried, widowed, and divorced women (Cumming et al., 1975).

Group 2: Married Women With No Children at Home

Gove and Geerken (1977, Table 4) described an American urban community survey in which 77 employed married women without children reported slightly fewer symptoms (such as feeling anxious, bothered by special fears, or that nothing was worthwhile anymore) than did 86 unemployed married women without children (16% against 22% scoring "high"; not statistically significant). Walker and Walker (1980) used the Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970) with a very small number of full-time, part-time, and nonemployed married women without children (N = 26, 3, and 4, respectively). The differences between trait anxiety scores (35.5, 25.7, and 42.2, respectively) were overall significant at the .05 level, but more substantial samples are clearly desirable.

Using the Center for Epidemiologic Studies Depression scale (CES-D), Radloff (1980) analyzed data from married women participants in her community survey according to the presence or absence of children in the home. Among married women

whose children had by now left home, lack of paid employment was accompanied by slightly higher depression scores (8.08 against 7.77 for 104 homemakers and 99 employed women, respectively; not statistically significant). A similar nonsignificant difference was observed for married women without children ($N = 14$ and 63, respectively), although the overall depression level was in this group somewhat higher.

In summary of Groups 1, 2, and 3, a strong positive association between well-being and having paid employment is found for single women. This is not usually the case for married women with no children at home. In no group is paid employment associated with reduced well-being.

Group 4: Married Women With Children at Home

Studies of Group 4 using Type D, E, and F measures (of psychological distress, life satisfaction, or positive well-being) are almost unanimous in their report of no significant differences between employed and unemployed married women with children at home. Walker and Walker (1980) found no significant variation in trait anxiety in data from 272 married women with children. Gove and Geerken (1977) and Radloff (1980) included analyses of scores from employed and unemployed married women with children at home, revealing no significant differences. (Their well-being indices have been described above.) Sharp and Nye (1963) obtained mailed questionnaire responses from women in three small American towns, using a 10-item scale of anxiety symptoms (Do your hands tremble enough to bother you? Are you ever bothered by nightmares? etc.). Scores of full-time employed, part-time employed, and nonemployed women with children were almost identical. From the same sample Nye (1963) obtained ratings of personal satisfaction with daily work, the community, marriage, children, family income, house and furniture, and recreational life. On all except the first of these, no differences associated with employment status were found; in the first case there was a tendency for part-time employed mothers to be most satisfied with their daily

work. In a study of graduates from an elite women's college, Stewart and Salt (1981) compared 24 married career women with children and 31 mothers without careers in terms of Zung's (1965) self-rating depression scale; mean scores were almost identical.

In research with British working-class married women with children under 14, Parry and Warr (1980) used Bradburn's (1969) measures of positive and negative affect and a two-item measure of life satisfaction. Mean scores of full-time employees, part-time employees, and nonemployed women ($N = 60$, 65, and 60, respectively) were almost identical in each case. A significant difference was, however, observed with a six-item derivative of the Zung (1965) depression scale, full-time employed mothers yielding lower depressed mood scores than did those without jobs ($p < .01$); the difference between nonemployed and part-time employed mothers was not significant (Warr & Parry, in press). Ferree (1976) studied a group of American working-class women, in her case with children in first or second grade but none preschool (35 full-time employees, 39 part-time employees, and 61 without paid employment). Her measure was of Type E, a single question about how satisfied women were with the way they were spending their lives. Results are reported in terms of the percentage of each employment status group who were dissatisfied: 17%, 8%, and 26%, respectively, with the difference between the latter two values approaching significance in this working-class sample.

Other Research on Women With Children

A number of related studies may be reviewed at this point, where investigators have used analysis categories that do not correspond exactly with the framework. Moss and Plewis (1977) studied 180 women with preschool children in London, 78% of whom were married. No linear relationship was found for the sample as a whole between number of weekly hours of paid employment and interviewers' standardized ratings of psychological distress. In a Canadian urban study, Welch and Booth (1977) examined scores on the Langner 22-item measure from

full-time employed, part-time employed, and nonemployed married women with one or more children of any age, not necessarily at home ($N = 87, 50,$ and 354, respectively; the women were all under 45, so most of the children were presumably still in the home). Mean scores (controlling for several possible confounding variables) were not significantly different from each other at 5.2, 4.9, and 6.0, respectively. The slight advantage associated with paid employment was mainly present for women whose children were above preschool age, being less marked for women with preschoolers, and the differences were somewhat greater for working-class families than for middle-class families (see Table 2, Welch & Booth, 1977). Nevertheless, these potential mediating influences were not formally tested.

Two other investigations into women with children of any age are by Feld (1963) and Rose (1955). In the former case, with a representative sample of American adults, no differences were found between full-time employed women and nonemployed women on a summary measure of psychological disturbances (The published data refer to 438 white respondents.) There was a tendency ($p < .05$), however, for employed women to feel less adequate as parents and to be more self-accepting in their responses to an open-ended question about their differences from other people. Rose's study was based on returns from 208 middle-class mothers of American sociology students; whether or not they had any children still at home is not indicated. Although employed women were more satisfied with their lives in general (a single-item measure), this difference was clearly confounded by other factors. For example, the employed mothers were also the ones identified as more likely to have paid servants in the home.

Groups 2 and 4 Together:
Married Women in General

The remaining studies to be considered are those whose results are presented for married women as a whole. In many cases a sample is drawn to include all types of married women: young women with children at home, older women whose children have left home, as well as women of all ages who have no children. With such broad samples it is of course difficult to make predictions based on our conceptual framework. In the majority of cases, however, the results are similar to those reviewed for Group 4 alone: Employment status is rarely significantly correlated with psychological well-being for samples of married women in general.

Using Type E measures of overall life satisfaction (one item) and general affect (eight bipolar scales, such as boring–interesting and miserable–enjoyable) in a national household survey in the United States, Campbell et al. (1976) found no differences between those married women with and those without jobs ($N = 291$ and 445, respectively).

Indices of psychological distress (Type D) have been used in nine studies under this heading. Radloff (1975) found no significant differences in depression scale scores (CES-D, see above) between the groups in question (381 employed and 413 unemployed married women). (See also Radloff, 1980.) Neither did Walker and Walker (1980), Cochrane and Stopes-Roe (1980), and Gove and Geerken (1977) in studies already introduced. [The latter authors cite in Table 4 a highly significant main effect of employment status, but that analysis also included employed married men. In terms of the percentage of "high" scorers on psychiatric symptoms, employed married women are only slightly less troubled (23% "high" scorers) than unemployed married women (29%).] Cochrane and Stopes-Roe (1981b), however, in the study described earlier, reported significantly more self-rated psychiatric symptoms ($p < .05$) in unemployed than in employed married women aged between 20 and 60 years ($N = 36$ and 42, respectively).

Hare and Shaw (1965) obtained self-reports of neurosis, depression, anxiety, fatigue, and dizziness from 736 married women in two districts of an English town. No significant associations were found, in either of the districts or for the districts taken together, between employment status (full-time, part-time, or not employed) and "nervous disturbance" in terms of these items. Cartwright and Jefferys (1958) also examined self-reported symptoms in a British ur-

ban community survey. The sample (aged between 16 and 54 years in this analysis) comprised 215 employed married women and 309 who were without paid employment. No differences were observed in terms of reported depression, nerves, undue irritability, sleeplessness, and other symptoms.

In a secondary analysis of data from a subsample within an American urban community survey, Rosenfield (1980) examined scores of 14 employed and 16 unemployed married women on an overall scale of depressive symptoms from the Structured Interview Scale (including trouble getting or staying asleep, special fears, low spirits, etc.). The slightly higher depression scores of the unemployed women were not significantly different from those of the employed women. Matched groups of 51 employed and unemployed married women were compared by Newberry, Weissman, and Myers (1979) on several measures of depressive symptoms; scores were almost identical for the two groups.

Newberry et al. (1979) also obtained information for psychiatric diagnostic assessments on the Schedule for Affective Disorders and Schizophrenia (a Type C index in our classification). Employed and unemployed married women were found to be similar, as they were in terms of whether or not they recently received psychiatric treatment (a Type B measure). Examining General Health Questionnaire scores of 213 employed and 528 unemployed married women in an Australian community survey, Finlay-Jones and Burvill (1979) recorded no difference in minor psychiatric morbidity between the groups (20% and 18%, respectively, were identified as probable cases). Tonge, Cammock, Winchester, and Winchester (1961) analyzed records from a rural general practice in Britain to identify patients diagnosed as having anxiety and depressive reactions. Among married women under 60, slightly more of those who were employed were so diagnosed (12% compared with 7% of those who were unemployed; note that the authors have miscalculated some percentage values in Table 2).

Finally, we should note that the regularly observed association between suicide rate and employment status is also present in analyses of data from all married women (Cumming et al., 1975).

Overview

The pattern of findings from the 38 studies is summarized in Table 1. Here we have grouped results in terms of the categories of women and the six types of well-being introduced earlier. The table contains information about the number of comparisons yielding significant differences in favor of paid employment as a contributor to enhanced well-being and about the number of cases where no significant difference of that kind was observed. The recorded number of comparisons is of course larger than the number of studies reviewed because some studies permit several tests of differences associated with employment status.

Table 1 should be examined in conjunction with the more detailed accounts presented in the text because it inevitably omits consideration of important additional variables. For example, comparisons between employed and unemployed samples are entered in the table irrespective of socioeconomic status, although we have stressed the importance of this feature on several occasions. Marital and parental status varies between the several investigations of women in general that are summarized in the first row. Furthermore, the quality of research in this field is rather uneven, so some studies appearing in Table 1 are less adequate than others; specific design failings have been noted throughout the text and are further examined later. A separate tabulation (not shown here) of investigations that we believe to be of higher quality, however, yields the same pattern as in Table 1, and for present purposes it is preferable to include all of the studies reviewed above.

Discussion and Conclusions

The observed pattern is largely consistent with the conceptual framework set out earlier in this article. Investigations with women in general (the top row in Table 1) indicate that self-report measures of psychological distress and happiness (Types D and E in the classification used here) are unlikely to

Table 1

Summary of 38 Studies (Irrespective of Quality) Comparing Women's Psychological Well-Being and Their Paid Employment Status

Categories of women	Suicide and attempted suicide (A)		Diagnosed psychiatric illness (B)		Psychiatric morbidity (C)		Psychological distress (D)		Life satisfaction or happiness (E)		Positive well-being (F)		All indices	
	+	ns	+	ns	+	ns	+	ns	+	ns	+	ns	+	ns
Women in general (Groups 1, 2, 3, and 4)	2		2	1	2	3	2	4		1			8	9
Single women with no children at home (Group 1)					2		1						3	
Single women in general (Groups 1 and 3)	1				1		1						3	
Married women with no children at home (Group 2)							1	3					1	3
Married women with children at home (Group 4)							1	6		3	1		1	10
Other groups of women with children								3	1				1	3
Married women in general (Groups 2 and 4)	1			2		2	1	8		1			2	13
All of the above comparisons	4		2	3	5	5	7	24	1	5	1		19	38

Note. + = positive, *ns* = not significant. Comparisons identified as positive are those in which employed women have significantly higher psychological well-being than those who are unemployed. No cases of a negative association between employment status and psychological well-being were located.

be related to whether or not a woman has a job. Type A measures (of suicide) are so associated, but specific explanations are appropriate for that finding. For indices of Types B and C, those differences that are observed between women with and those without employment appear from the evidence cited earlier to be influenced by other variables within our conceptual framework.

As described at the outset, this framework can be tested only partially against previous findings because these are rarely in sufficient detail to be mapped onto the model. Those tests that are feasible, however, yield encouraging results. When the three components are taken singly, the pattern is as follows.

Occupational Involvement

At the group level of analysis we have used marital and parental status as a rough index of average occupational involvement. Findings separated in this way support our expectations. For women in Group 1 (single, with no children at home), unemployment is significantly associated with low psychological well-being. This is less the case for women in Group 2 (married, with no children at home) and hardly at all so for Group 4 (married, with children at home). Studies of Groups 1 and 3 together (all single women) yield differences between the employed and the unemployed, but research in terms of Groups 2 and 4 together (all married women) typically fails to do so, except in the case of suicide rates, where differences are found for every group.

Some evidence of the importance of occupational involvement at the individual level of analysis has been provided by Moss and Plewis (1977). They recorded a significant association between psychological distress and reported "wanting to work" in their sample of unemployed married and single women with children, a result that parallels that for men's work involvement described earlier (see also Haller & Rosenmayr, 1971, and Sobol, 1963). This pattern was also found in an unpublished analysis of data from 44 unemployed single women without children in the study by Stafford et al. (1980). In that case the observed correlation

between minor psychiatric morbidity (GHQ scores) and scores on a standardized measure of personal work involvement was .31 ($p < .05$).

Quality of Nonoccupational Environment

Our framework indicates that having a job should in general be psychologically beneficial primarily for those women whose nonoccupational environment is adverse. This point has been demonstrated directly by Brown and Harris (1978) in terms of recent negative life events and three vulnerability factors, but most other investigators have not obtained data that are addressed specifically to the question.

When socioeconomic status is used as a rough index of overall environmental adversity, however, the observed pattern of results is consistent with the framework. Employment status and psychological well-being are found to be more associated in groups of working-class women than in their middle-class counterparts.

Personal financial concerns have rarely been examined in this area, despite the fact that financial position can markedly affect the quality of life. One exception is the community survey by Keith and Schafer (1980b) of 135 American employed married women. Using the 11-item symptom depression scale of Pearlin (1975; see earlier), they observed that depression scores among these employed women were most strongly predicted by their rating of their financial situation. Women who evaluated their financial situation as poorer than that of other women of their age tended to have higher depression scores ($r = -.32$). Such a correlation may of course reflect a generalized pessimism rather than being evidence of a causal link. Nevertheless, the role of financial factors in the determination of psychological well-being deserves renewed emphasis.

Quality of Employment Relationship

The third component in our conceptual framework has been examined in only a few published studies. The small amount of evidence available, however, supports our belief that the quality of a woman's employ-

ment relationship is an important factor. Parry and Warr (1980) recorded strong correlations between working mothers' overall attitude to their paid job and measures of positive affect, negative affect, and life satisfaction. Radloff (1975) reported average depression scores of 7.82 and 10.94 for employed married women who were "happy" and "unhappy," respectively, in their jobs (values calculated from Table 7). Interaction strain (that arising from conflicts between employment and domestic roles) has been examined by Pearlin (1975), Parry and Warr (1980), and Warr and Parry (in press). Each investigation yielded associations with well-being; for example, Warr and Parry observed that employed mothers with high interaction strain had significantly higher depressed mood scores than did those with low interaction strain ($p < .01$).

Methodological Problems

All published studies are cross-sectional, leaving open the possibility that any observed differences associated with employment status are due to self-selection; for example, less anxious or less depressed women may be the ones who seek or retain paid employment. Longitudinal research is one (rather difficult) solution to this problem, but there is also scope for closer attention in cross-sectional studies to the timing of recent changes in well-being. Brown and Harris (1978) specifically addressed this issue by examining only recent "onset cases" of depression, and this procedure has obvious merit. It is most appropriate, however, when categorical measures of clinical state are used (for instance, identifying a person as a clinical case or not a case) and less appropriate with continuous variables such as generalized psychological distress. Even in these studies, however, information about the timing of changes might be gathered more systematically. Related to this is a need for taking a more careful job history: Some groups of women are likely to move in and out of paid employment with greater frequency than other employees, so employment status on the day of an investigation may be an unreliable index of recent or imminent employment.

Another difficulty arises from inadequacies of sampling or of published descriptions of samples. We have included examples of evidence that socioeconomic status, childcare demands, life cycle stage, and other features may themselves affect psychological well-being or mediate the influence of paid employment. Published comparisons between employed and unemployed groups may be subject to confounding by unidentified variations in important characteristics of these kinds. Some investigators have introduced controls for important other variables, but many researchers have neither measured nor controlled for these features.

Interpretation of findings is also made more difficult by a somewhat cavalier attitude to the definition of variables. Many reports fail to specify how "employed" or "unemployed" women are defined, and it is rare for investigators to distinguish between "unemployed and seeking work" and "not employed and out of the labor market." Several reports refer to full-time and part-time employment without indicating where the lines have been drawn, and others use definitions that lead to inaccurate labeling of employment status. For example, Mostow and Newberry (1975) defined "housewives" (for comparison with "workers") as those working up to half-time or not at all; many "housewives" in their study were thus in fact employed part-time. A similar classification was adopted by Newberry et al. (1979) and Radloff (1975). Stewart and Salt (1981) appear to have defined employment status on the basis of information obtained 2 years before depression data were gathered. Age is another variable that has sometimes been too loosely treated; a number of studies have included women above 65 (and thus out of the labor market) in their comparisons between the employed and unemployed (e.g., Bradburn & Caplovitz, 1965; Campbell et al., 1976; Cochrane & Stopes-Roe, 1981a; Cumming et al., 1975; Keith & Schafer, 1980b).

The definition of "married" is always a problem, and several investigators have grouped together women who are legally married whether or not they are currently living with their husbands. This makes for a difficulty of comparison between results

that is perhaps inevitable, but it is aggravated by some investigators who fail to specify which definition they have used. Parental status has also been identified in a range of ways: number or presence of preschool children, whether one has three or more children, or merely having children of any age.

Limitations in the measurement of outcome variables should also be noted. Type B measures (medical indices' are of course important, but they have the recognized problems of sampling bias, in that patients are only a subset of the people who are distressed to a clinical degree. Type D measures, obtaining self-reports of psychological distress, often lack validation of the kind undertaken for morbidity measures (Type C), and average scores from a healthy population are typically very low with a skewed distribution. Type E measures of life satisfaction or happiness are often excessively simple and may themselves be unrelated to other indices of well-being.

There is an indication in the studies of women in general (see, for example, the top row of Table 1) that well-being differences associated with employment status are more likely to be observed with indices of Types A, B, and C (those of direct clinical relevance) than with the other measures, typically self-reports of anxiety, depression, happiness, and so forth. In part, this tendency is due to a greater proportion of working-class samples in published studies using Type A, B, and C indices. Studies using the other types of measures, however, have generally failed to find a beneficial effect, even in groups of low socioeconomic status. Why does this difference between measures occur?

Type A (suicide) is a special case, but it could otherwise be that only the more serious psychological reactions are influenced by whether or not a woman has a job, or that a research concentration on these more serious reactions yields a more reliable differentiation among respondents at an extreme of the distribution. Those Type B and C studies that use a categorical "case" criterion also differ from investigations using measures of Types D, E, and F in that the latter examine average values on continuous variables; this logical and procedural difference might contribute to the imbalance in positive findings across the two types of study. More generally, it could be that measures of Types D, E, and F are more open to forms of response bias, or that studies using indices of Types B and C have in general been more thoroughly designed.

The different results from separate outcome measures are of major theoretical importance and not merely of methodological concern. In both respects one important recommendation may be made: Investigators should whenever possible examine psychological well-being at several levels simultaneously, incorporating into their research measures of the several types identified here. This empirical procedure would more rapidly establish the boundaries of the effects under investigation.

Future Research

There is no justification for further empirical comparisons between the psychological well-being of women in general who have jobs and those who do not. Research must examine more precise hypotheses. The conceptual framework outlined here, together with its associated evidence and methodological prescriptions, provides a means toward more specific predictions.

One overriding research requirement concerns the nature of sampling frames. Investigators in this field have been accustomed to seeking a representative sample from the population of a city, region, or country. Such an approach is essential in attempts to establish prevalence rates, but it has severe limitations in respect of detailed model testing. The major problem is that the number of cases in analytic cells that are crucial to multivariate model testing becomes too low or excessively imbalanced. We thus urge a shift of emphasis, away from studies based on representative overall sampling and toward the establishment of those target samples that are required to test models incorporating the features identified here. Such research is often more costly and difficult than research drawing random samples from a full population, and in order to retain contact with a definable universe it needs to be conducted within the framework of those

investigations. A defined population can be screened to gain access to a higher proportion of rare but theoretically interesting individuals than would be the case in a random survey. A shift in that direction is essential for more rapid empirical and theoretical progress in the area of this review.

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Depressed Mood in Working-Class Mothers With and Without Paid Employment

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Summary. Depressed mood scores of employed and non-employed working-class mothers were found to differ significantly, and also to be affected by aspects of a mother's employment relationship and domestic environment. The latter two features were assessed through employment role attitude, reported interaction strain, home role attitude and child-care demands; the second and third of these variables were overall significantly associated with depressed mood. Reported low social support was also found to be correlated with depressed mood in the sample as a whole and in part-time employed mothers.

Introduction.

The effect of paid employment on psychological well-being has often been studied for women in general. The failure to examine separately, for example, working-class and middle-class women, mothers and non-mothers, or married and single women is regrettable, as the pattern of results differs between these categories. For instance, although a positive association between paid employment and mental health has been consistently found for single women, studies of married women with children at home have generally found less, or even no, association.

In an examination of more than 30 studies of this kind (Warr and Parry, 1982), we have identified a number of variables which might mediate the association between psychological well-being and employment status for mothers with children at home. We have observed for other categories of women that paid employment is more likely to be associated with higher well-being in working-class than in middle-class samples, and that it is more often reported for clinically relevant measures of depression, anxiety or generalized distress than with survey indices of life satisfaction, happiness etc. We have also suggested

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Methods

Sample and Procedures.

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The effect of paid employment on women's psychological well-being has often been discussed in terms of women in general. The failure to differentiate between, for example, working-class and middle-class women, mothers and non-mothers, or married and single women is regrettable, as the pattern of findings differs between these categories. For example, although a positive association between paid employment and mental health has been clearly established for single woman, studies of married women with children at home have generally failed to record such an association.

In an examination of more than 30 studies of this kind (Warr and Parry 1982), we have identified a number of variables which might mediate the association between psychological well-being and employment status for mothers with children at home. We have observed for other categories of women that paid employment is more likely to be associated with higher well-being in working-class than in middle-class samples, and that it is more often reported for clinically-relevant measures of depression, anxiety or generalized distress than with survey indices of life satisfaction, happiness etc. We have also suggested

that the relationship is likely to be influenced by the quality of a woman's employment relationship, such that employed mothers with more positive occupational attitudes and those experiencing less strain arising from the management of dual roles might benefit most from having a paid job. Aspects of the domestic environment, for example those operationalised through measures of child-care demands and attitudes toward one's domestic role, may also influence the association between well-being and having paid work.

The present investigation aims to contribute to this research area by examining these possibilities in a precisely-defined group of mothers. We have obtained responses on a validated measure of depressed mood from a sample of mothers all of whom had children under 14 at home, were living with their husbands, and were members of working-class families. In addition, to tap the quality of employment relationships, we have examined mothers' attitudes to their employment role and the reported strain arising from the interaction between the two roles. To partially assess the quality of non-occupational environments, we have examined home role attitudes and a measure of child-care demands. Finally, we have investigated the reported availability of social supports, a variable which has been the subject of much research (e.g. Cobb 1976; Gore 1978; LaRocco, House and French 1980; Miller and Ingham 1976), generally indicating that support in the form of available confidants, helpers and advisers protects against psychological distress.

Method

Sample and Procedure

The sample comprised 182 women identified as 'working class' through their own jobs if they were employed or through their husbands' jobs if they had

no paid employment. In the former case women were included in the sample only if their husband's job was of similar kind to their own, involving skilled, semi-skilled or unskilled manual work (IIIM, IV or V of the Registrar General's classification system). The sample was drawn in approximately equal numbers from 10 widely dispersed sampling areas in the mainland United Kingdom. The women were all of British origin, were living with their husbands, and had children under the age of 14. Thirty-one % had one child, and 52% and 17% had two and three children respectively. Approximately equal numbers (59, 65 and 58) were in full-time employment outside the home (more than 30h a week), part-time employment (up to 30h a week) and without paid employment.

Interviews were carried out individually in respondents' homes by trained female staff of National Opinion Polls Ltd. Each interviewer sought volunteers to complete her quota sampling frame, and after an oral introduction to the investigation and the questionnaire she left the respondent to complete the questionnaire herself. The interviewers subsequently called back to receive the completed questionnaire.

The Measure of Psychological Well-Being

To obtain a measure of well-being which would be both clinically relevant and acceptable in the present research setting, we developed a short form of the Self-rating Depression Scale (Zung 1965, 1974). The complete version of this contains 20 items tapping affective, physiological, psychomotor and psychological disturbances. The scale was intended to measure depth of depression, whether or not this occurs as a diagnosable disorder in itself. The present short form was derived from nineteen of these items using data obtained from a separate postal survey of 132 working class mothers. (The item 'I still enjoy sex' was omitted in these circumstances to maximise the response rate.) Twenty respondents were subsequently interviewed to check that there were no major discrepancies between their unsupervised responses and those obtained with face-to-face contact. As a result of this, the item "I find it easy to do the things I used to" was omitted from further analyses, as it was found unreliable in this population; a negative response often reflected material rather than psychological constraints.

For the remaining 18 items, corrected item-whole correlations were found to range from 0.27 to 0.63. The six items with the highest corrected item-whole correlations (above 0.56) were selected for incorporation into the scales. These were as follows: My life is pretty full; I feel that I am useful and needed; I have crying spells or feel like it; my mind is as clear as it

used to be; I feel downhearted and blue; I still enjoy the things I used to. The items derived by this method include those two which in the original scale covered affective disturbances and four of the eight covering psychological disturbances. Physiological and psychomotor items were found to be relatively poor predictors of the total score in this population. Response alternatives were: little or none of the time, some of the time, good part of the time, most of the time. These were scored 0 to 3, with reversal of weights as necessary, to yield totals potentially ranging between 0 to 18, where a high score indicates depressed mood.

This 6-item measure proved to be very acceptable to respondents, but does it tap principal features of depression? Evidence from both general population and psychiatric outpatient samples is presented in Table 1, where comparisons are possible with the 19-item version of the Self-rating Depression Scale.

The first two samples in Table 1 are of non-clinical respondents, and mean scores are low with responses skewed towards the non-depressed pole. However, scores for the two clinical samples were found to be normally distributed around means which are substantially higher and close to the mid-point of the possible range. The mean scores for depressed mood on the 6-item scale mirror those from the longer scale which has been widely used, and within each sample the correlations between the two forms (in the right-hand column) are very high (being naturally elevated by auto-correlation). Furthermore the alpha coefficient of internal consistency (Cronbach 1951; Novick and Lewis 1967) was clearly acceptable in all cases: 0.68, 0.77, 0.81 and 0.71 respectively for the four samples in Table 1. We conclude that the 6-item measure of depressed mood is adequately valid and reliable for research of the kind described here.

Table 1. Descriptive statistics for the 6-item measure of depressed mood and the 19-item Self-rating Depression Scale; and the observed correlation between the two scores

Sample	n	6-item scale		19-item scale		r
		Mean	S.D.	Mean	S.D.	
The present respondents	182	3.84	3.07			
Other working-class mothers in a community survey	132	4.66	3.91	16.46	9.23	0.88
Acute psychiatric outpatient referrals, women aged 25–45	27	9.67	3.94	27.30	9.00	0.88
Acute psychiatric outpatient referrals, men of all ages	44	7.52	3.86	22.32	9.25	0.84

Other Measures

Home role attitude was tapped by the 12-item scale introduced by Parry and Warr (1980). Items are of the kind "life at home is too much the same routine day after day", with responses yes, true, no, untrue, and don't know. A total score was calculated (with an alpha coefficient of 0.71 with this sample) to yield a measure of a mother's overall attitude to her domestic and child-care work.

Employment role attitude was similarly tapped by 12 items of the kind "I really dislike my job" (alpha coefficient 0.78). Full details are given by Parry and Warr (1980).

Interaction strain is an index of the difficulties experienced by an employed mother in coping with both domestic and paid work. An illustrative item is "The hours I work make it very difficult to look after the children". Responses were as for the two measures above, and with the present sample the alpha coefficient was 0.75 (Parry and Warr 1980).

Social support was measured through self-reported access to someone with whom to discuss problems, someone to turn to when very upset, help with babysitting, help with children when one is ill, contact with mother, discussions with husband, and availability of a loan of £20 when needed. The 7-item scale had response alternatives as described above, and yielded an alpha coefficient of 0.63.

Child-care demands were operationalised in terms of number and ages of children. In the present analyses two categories of respondents were created. Those designated as experiencing high child-care demands had at least one pre-school child, whether or not they had older children, whereas those of low

child-care demands were mothers whose children were all of school age.

The questionnaire contained scales in the sequence presented above, with the 6-item measure of depressed mood appearing last.

Results

Employment Status Differences

The observed mean depressed mood scores for the full-time employed, part-time employed and non-employed mothers were 2.95, 3.97 and 4.59 respectively (s.d. 2.54, 2.91 and 3.52). One-way analysis of variance indicated a main effect which was statistically significant at $P = 0.013$. Separate t-tests between the three means revealed that depressed mood scores were significantly different between the full-time employees and the non-employed ($P < 0.01$) and between the full-time and part-time employees ($P < 0.05$). The difference between non-employed and part-time employed mothers was not significant.

Associations With Other Variables

In order to examine the importance of other variables in relation to depressed mood, separate means were calculated for high and low scorers on each additional variable in each employment status category. In the case of employment role attitude, interaction strain, home role attitude and social support, the cut-off point was as close as possible to the median value for the sample as a whole. Child-care demand scores were separated in the manner described above. These

Table 2. Mean depressed mood scores for mothers categorised as high and low on five additional variables

	Complete sample	Full-time employed	Part-time employed	No paid employment
High employment role attitude	2.91	2.65	3.14*	
Low employment role attitude	4.05	3.18	4.16*	
High interaction strain	4.36**	3.79**	5.07**	
Low interaction strain	2.52**	1.78**	3.00**	
High home role attitude	3.11**	2.42	3.13*	3.71
Low home role attitude	4.46**	3.34	4.85*	5.35
High child-care demand	4.00	3.03	4.38	4.43
Low child-care demand	3.64	2.87	3.52	4.83
High social support	3.14*	2.78	2.93*	3.85
Low social support	4.01*	3.06	4.69*	4.57
Overall means	3.84	2.95	3.97	4.59

* $P < 0.05$
** $P < 0.01$

procedures yielded sample sizes which were almost equal in each case, but a small number of respondents were dropped because of one or more missing values. For example, the overall numbers of high and low home role attitude respondents were 84 and 91, yielding a total of 175 instead of the full 182 respondents.

Mean values are presented in Table 2. Two-way analyses of variance have been conducted on each set of means. Significant main effects were found for interaction strain, home role attitude, and social support (at the 0.01, 0.01 and 0.05 levels respectively, as indicated in the left-hand column of the table), but no significant interaction terms were recorded. Separate t-tests have been carried out for the three employment status categories, and those yielding significant t-values are also marked in Table 2.

The interaction strain variable is the most predictive of depressed mood, such that employed mothers with high interaction strain have mood scores well within the range of values from those who have no paid employment; part-time employees with high interaction strain have particularly high depressed mood scores. The smallest associations with depressed mood are in terms of child-care demand. This could be because of the limited range of values on this index (all respondents have between one and three children) and the relatively crude division into two categories; further differentiation is not appropriate with this size of sample.

The depressed mood scores of part-time employed mothers are the most sensitive to variations in the other features. Part-time employees classified as scoring low on home role attitude and social support and high on interaction strain have mean depressed mood scores in excess of the overall mean for women without paid employment (4.59). Differences are in the same directions for full-time employees, but these reach statistical significance only in the case of interaction strain. No differences are significant for women without paid employment.

One possible explanation of the differences in depressed mood between high and low scorers on employment role attitude, home role attitude and social support among part-time employed mothers but not among full-time employed mothers is in terms of differing means and/or distributions of scores on these variables for the sub-samples. For example, it is possible that the 'low employment role attitude' sub-sample of part-time employees has an attitude to employment which is more negative than that of the parallel sub-sample of full-time employees. This possibility has been explored through examination of mean values and distributions; scores are very similar, and no differences are discernible which could account for the pattern of results shown in Table 2.

Discussion

The significant association between employment status and depressed mood observed in this study is unusual: most investigations have failed to record well-being differences between employed and non-employed mothers (Warr and Parry 1982). However, as pointed out in the Introduction, there is a need to investigate with clinically-relevant instruments homogeneous samples, especially those likely to be materially and psychologically deprived. The present focus upon working-class mothers derives additional interest from further analyses of findings from Brown and Harris (1978) and Bebbington, Hurry, Tennant, Sturt and Wing (1981). In both of these studies, when employment status and caseness were examined for working-class and middle-class women separately, significant associations were recorded for working-class but not middle-class sub-samples (see Warr and Parry 1982; the additional analyses were kindly made available by Professor George Brown and Dr. Paul Bebbington).

There has been a marked lack of attention to occupational variables, attitudes and role demands in the literature on women's mental health. Pearlin's (1975) study is an exception, revealing modest links between employed women's depression symptoms and reported work problems; however, few details are given. Moss and Plewis (1977) report that among unemployed mothers "wanting to work now" was positively associated with psychological distress, suggesting that a measure of occupational involvement (tapping the personal salience of paid employment) would have been of additional predictive value in the present investigation.

Future studies attending to these issues would benefit from the use of standardised measures of occupational attitudes and aspirations. Unfortunaetly, most published scales have been developed for male respondents and need adaptation for research with mothers of young children. The measures used here of home role attitude, employment role attitude and interaction strain avoid this criticism (Parry and Warr 1980) and may warrant wider application. However, they need to be supplemented with suitable indices of occupational involvement and financial motivation.

The present study has indicated how measures of this kind permit additional prediction of women's well-being beyond that possible from current employment status alone. Although in certain populations employed women have lower depressed mood scores than those not employed, there are wide variations within each group. These variations will be better understood if future investigations embrace occupational as well as non-occupational features.

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APPENDIX C

The fragile self: Narcissistic disturbance and the protective function of depression

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The role of self-esteem in the aetiology of depressive disorders is not limited to negative self-evaluations. A broader concept, embracing the experience of the self, is necessary. A developmental model of self-esteem regulation is proposed, derived in part from Mahler's work on separation–individuation in infants and Kohut's work on narcissism. A concept of a 'fragile self' is formulated and developed; the depressive state is seen as protecting this fragile self. The model provides a coherent account of individual differences in proneness to depression (in interaction with environmental factors) which is useful to psychotherapists, yet open to empirical test and research use. The model is discussed in relation to psychological research on depression and implications for clinical practice are outlined.

A sympathetic inquiry into the secret preoccupations of depressed patients will often reveal repetitive ruminations over what are felt to be shameful or humiliating experiences. These give us the impression of a desperate attempt to master and repair an injury to the image of the self. We believe that this and related phenomena reflect a particular vulnerability in the depression-prone personality which requires further elucidation. An appreciation of this fragility in the experience of self has considerable implications for an understanding of the nature of self-esteem regulation in depression.

This paper concerns a particular psychodynamic characterological organization, often termed the 'depressive personality', deriving from early interpersonal experiences. The formulation presented here does not refer to those forms of depression which are predominantly biological in origin, nor does it concern the Kleinian concept of the 'depressive position'. There is considerable agreement in clinical descriptions of the depressive personality (Rado, 1928; Fenichel, 1945; Cameron, 1963; Beck, 1967; Jacobson, 1971) as well as empirical support for the concept (Chodoff, 1972; Altman & Wittenborn, 1980). In this paper, it is hypothesized that a 'fragile self' exists at the core of the predicament of the depression-prone personality. This is seen as leading the individual to respond to life stress (particularly loss) by becoming reactively depressed.

A simple unitary concept of lowered self-esteem or negative self-evaluation (see Becker, 1979) is not adequate to describe the radical alteration in the experience of the self which emerges in depression. Instead, a central characteristic of depression is what might be described as a collapse in the experience of the self and an uncertainty concerning its place in the world. Thus, rather than place the emphasis on self-evaluation, in this paper the prime disturbance is seen as relating to the *sense of self*.

In view of this emphasis upon the self and self-experience in depression, depression can be described in more psychoanalytic language as a 'narcissistic disturbance', as defined by Stolorow (1975): a disturbance is narcissistic to the degree that it reflects a disruption in the 'structural cohesion, temporal stability and positive affective colouring of the self-representation'. However, as Kinston (1980) has pointed out, the term 'narcissism' has been used in two major ways: first to denote a disturbance in the experience of the self and second to denote a defensive withdrawal into the self away from others. These two aspects of narcissism are linked here through the concepts of 'narcissistic vulnerability' and the 'depressive prison'.

The importance of the experience of the self in depression is clarified by setting the discussion in a developmental context. Drawing on the work of a number of psychoanalytic theorists (notably Mahler and Kohut) the development of identity is outlined showing how each stage of this complex development makes its own particular contribution to self-esteem. The continuity between normal and depressive self-esteem regulation is stressed and a model of self-esteem processes in the depression-prone personality proposed, describing a situation where the experienced self is inherently and constantly at risk of collapse. The precarious quality of this sense of self is referred to in the phrase the 'fragile self'. The depressive personality is thus shown to be *narcissistically vulnerable.* The state of depression itself can then be seen as reflecting both an injury to the sense of self and at the same time a protection against further injury.

The development of the sense of self

Much has been written in the last decade concerning the development of the sense of self. Recently, Stolorow & Lachmann (1980) have argued that a great diversity of mental activities, including masochistic and perverse behaviour, may function to preserve a positively toned cohesive sense of self, and they have noted the pervasiveness of this need. Moreover, as Blanck & Blanck (1979) have emphasized, it is possible to describe different phases of development indicating the specific contributions of each to self-esteem. Three main aspects of this development are discussed here – the primal relationship, the psychological birth and transformations of narcissism.

(1) The primal relationship

It is generally accepted amongst psychoanalytic theorists that the sense of self as a separate individual is not 'given' but is the outcome of a slowly evolving process, the gradual emergence from a state of primary identification with the mother. The original state prior to this psychological birth has been variously described in terms of 'primary narcissism' (Freud, 1914); 'primary identification' (Fairbairn, 1952); 'harmonious mix-up' (Balint, 1960); 'undifferentiated matrix' (Hartmann, 1964) and 'symbiosis' (Mahler et al., 1975). All these terms refer to a stage in which the child has no clear sense of self as distinct from other. Through her care, the mother is seen as providing a kind of psychological womb, some degree of continuity between intra-uterine life and a more separate existence. This has been referred to in terms such as a 'container' (Bion, 1962); a 'protective shield' (Khan, 1963); a 'holding environment' (Winnicott, 1960a) and 'marsupial space' (Rey, 1977, quoted in Steiner, 1979). It is out of this matrix that the child's sense of self and independent ego functioning can gradually emerge. Good experiences within this empathically responsive early environment are thought to lay the foundation of the personality, the establishment of 'basic trust' (Erikson, 1950) or 'confident expectation' (Benedek, 1959). Thus this phase of development makes a fundamental contribution to self-esteem.

(2) The psychological birth

The birth of the self through the substages of separation–individuation has been described by Mahler et al. (1975) on the basis of longitudinal studies of infants and children with their mothers. This development concerns the intrapsychic separation of self from other, in parallel with the vicissitudes of physical separation. It is the subphase termed 'rapprochement' which is particularly relevant. This is a period of relative depression following the earlier exuberance of the 'practising' subphase when the toddler is enjoying a 'love affair with the world' (Greenacre, 1957), joyfully exploring newly developed motor skills. Mahler et al. note that in rapprochement, the child shows a renewed need to cling

to return to the mother after the excited foray into the outside world. This constitutes a 'crisis of reconciliation' whose outcome is crucially dependent on the attitude of the mother.

(3) *Transformations of narcissism*

The third of these intertwined strands of development lies in the realm of narcissism, as described through the innovative work of Heinz Kohut (1971, 1972, 1977). This concerns the progressive transformation of the original illusion of continuity between the self and the world when, to use Winnicott's (1951) example, if the mother presents the breast at the right moment, the baby does not need to know that it has not created the breast.

Kohut describes two transitional stages between this infantile narcissistic position and mature self-esteem; these he terms the 'grandiose self' and the 'idealized parent' respectively. In the first, the child's positively toned sense of self rests upon the admiring response to his or her exuberant showing off. In the second position, the child derives a sense of well-being through feeling merged or linked with an idealized other, usually a parent.

Kohut has argued that the child's positive and cohesive sense of self is for some years absolutely dependent upon the presence of admiring, empathically responsive others or upon idealized others. These are thus experienced not as fully separate but as part of the child's psychic structure; Kohut therefore terms such figures 'self-objects'. This insight helps us to understand the catastrophic nature of early separations since, from this point of view, separation from a significant caretaking figure will be experienced by the child as a wrenching apart of his or her self.

If, on the other hand, minor disappointments and disillusionments occur, the child can develop psychic structure through the repeated mastery of these innumerable challenges to self-esteem. Through this process of 'transmuting internalization' (Tolpin, 1972) the child gradually internalizes the regulatory functions originally performed by parental self-objects. Thus the parents' adaptations to the child need not be perfect, but merely 'good enough' (Winnicott, 1960b).

Winnicott, Mahler and Kohut all emphasize that separation and disillusionment should be gradual. The parental self-object acts as a buffer between the child's phase-appropriate grandiosity and a catastrophic experience of helplessness; the self-object provides a stepping-stone to a more separate psychological existence. If this development proceeds satisfactorily, the person develops a healthy narcissistic buoyancy and a sense of self as separate, loved and lovable.

Kohut argues that without appropriate narcissistic gratification in childhood, these early narcissistic positions cannot be transformed into mature ambitions and ideals, as they would in normal development. Instead they persist as unrealistic needs for admiration and for an idealized other. The persistence of these 'narcissistic tensions' means a consequent proneness to shame, disappointment and depression; the person in this predicament could be described as 'narcissistically vulnerable'.

The disturbance in the development of the self in depression

A number of authors (e.g. Cohen *et al.*, 1954; Jacobson, 1971; Arieti & Bemporad, 1980) have suggested common conditions in the early environment of depressive patients which seem likely to interfere with the development of a sense of self, and to contribute to narcissistic vulnerability. If, instead of mirroring and responding to the child's total self, the mother's affection and approval have been excessively conditional, the child will feel loved only in so far as he or she conforms to mother's wishes. Whilst this must be true to some extent of every child's situation, for the depressive personality the balance may have

been tipped in favour of adaptation to the mother rather than separation–individuation. If, overall, adaptation prevails over individuation, the child seems likely to develop what Winnicott (1960b) has termed a 'false self' which conceals and protects a more authentic but latent 'true self'.

The child in this position may not be deprived of love *per se* but it is love for his or her own self that is lacking. Instead the parents might be viewed as relating to the child as their self-object. As Miller (1979) comments:

> This does not rule out strong affection. On the contrary the mother often loves her child as her self-object passionately, but not in the way he needs to be loved. Among other things, therefore, the continuity and constancy that would be so important, are missing from this love, but above all, also the framework within which the child could experience his feelings and his emotions. Instead he develops something which the mother needs, and which certainly saves his life . . . at the time, but nonetheless may prevent him throughout his life from being himself.

As Masterson & Rinsley (1975) point out, if the mother is affectionate as long as the child remains close and dependent, but becomes cold and rejecting in response to attempts to separate and individuate, then the child can feel either good but merged with mother, or separate from mother but bad. Under these circumstances there is no transitional or self-object stage; the child is either wholly *in* or wholly *out*. Since separation brings the threat of abandonment the *emergent sense of self is experienced as bad*.

The picture that arises is of a mother who has herself been preoccupied to the extent that she could not respond to the child's own needs. Moreover, Miller suggests that the child may accurately but unconsciously perceive the narcissistic vulnerability of the mother and come to fear that angry, assertive or independent behaviour may damage her. If this is so, then although rage will be repeatedly provoked by this frustrating situation, it cannot easily be expressed, thus reinforcing a sense of hopelessness and helplessness. Under these conditions, anger and resentment, representing the drive towards separation–individuation, cannot be experienced and integrated but will remain split off. The resulting loss of valuable aggressive parts of the self seems likely to futher contribute to a sense of weakness and depletion (Klein, 1946).

It should be clear that under these circumstances the transformation of narcissism described by Kohut cannot take place: first, because the child does not receive the mirroring and admiration of his or her own grandiose self; second, because there is no space for gradual disillusionment with the parent. Kohut's theory would thus predict the persistence of unintegrated infantile aspects of narcissistic grandiosity and idealization, coupled inevitably with the tendency to experience shame and disappointment.

The role of hidden envy

A further factor associated with this early situation can actively maintain the depressive syndrome. This is the presence of hidden *envy* which may be regarded as a more malignant and destructive form of the aggressive feelings associated with the drive towards independence.

Klein (1957) suggests that the distinguishing feature of envy is that it is hostility directed towards that which is good and helpful, *because one does not possess it oneself*. It is associated with a hatred of dependence. Thus, when envy is active, the person finds it difficult to accept help and 'take in' good experience in spite of simultaneously feeling very needy. The person is in the dilemma of needing, yet hating to need.

Where there is superficial compliance with and adaptation to the parent there is also a considerable sense of deprivation and some awareness of the dilemma stemming from dependence upon someone who does not provide what is needed in order to become independent. This seems likely to exacerbate feelings of envy, which would interfere with

the ability to accept help and good experience in an open and trusting way. Following the initial collapse in the experience of the self, the depressed mood may be maintained by the presence of continuous hidden envy which 'spoils' good experiences, preventing them from being taken in and used to modify the inner sense of deprivation and depletion.

This is an emotional dilemma which may well have a profound influence on self-esteem, to the extent that secure self-esteem rests upon the predominance of feelings of love over feelings of hate in the 'inner world'. For the depressive personality with considerable split-off rage and envy there may be no authentic basis for self-esteem. Such self-esteem as the person has will have a rather superficial and improvised quality. Lacking a more profound and substantial basis within the personality it can only be 'conjured up' through what is technically termed the 'manic defence', or through the enlisting of support from *outside*; it will be a *fragile* structure.

The retreat into depression – the 'depressive prison'

The depressed state of mind, as Rado (1928) originally pointed out, is often precipitated by a narcissistic injury such as loss or disappointment. However, depression can also be understood partly as a defence against *further* injury to the self. Depression often takes the form of a retreat away from a disappointing and unpredictable reality into a state of mind characterized by its 'closed-off' or 'locked-in' quality. For example, the comments and complaints of depressed patients are often very repetitive and a common experience of the therapist is difficulty in 'getting through'; the patient seems *enveloped* and *imprisoned* in the depressive state in a way which serves a protective function. Depression often involves an angry turning away from dependence on others and a rejection of hope and the possibility of change, because of a fear of further loss or disappointment. Instead, the patient withdraws and clings to a tortuous inner world which, although painful, is at least felt, unconsciously, to be more controllable.

One severely depressive man described his depressions as follows: 'When I feel let down by someone I just go right inside myself – I'm completely shut off – then I build up my hate campaign – I hate myself and everybody else as well – and then no one can reach me.' This man showed an extreme degree of narcissistic vulnerability in his proneness to feeling let down, abandoned, worthless and ashamed. The roots of this were very clear in his experience of a sudden and undoubtedly catastrophic wrenching away from his self-objects when his father died and he was precipitously and inexplicably (to him) sent away to a harsh military-style boarding school at the age of five.

This retreat can also be seen as a cognitive closing-off which prevents a realistic re-evaluation of the self and its place in the world. Instead of processing an experience and responding adaptively to it, the depressive person retreats into depression, avoiding the painful recognition of loss. This is epitomized by those instances of depression due to blocked mourning (Bowlby, 1980); the bereaved person emotionally closes off and does not allow the letting go necessary for the mourning to proceed. It can also be clearly discerned in depressive responses to major life-events, such as loss of a job, loss of status or retirement. Depression in adolescence similarly often seems to involve a closing-off and a refusal to negotiate the developmental task of giving up childhood.

We believe that it is the narcissistic vulnerability, the lack of a cohesive self which makes negotiation of these tasks so difficult for the depressive. Moreover, when the narcissistic components are so unintegrated, a grandiose self existing alongside a shamed self, then the realistic evaluation of the self is impeded.

Clinical observations and research evidence

This model of self-esteem processes in relation to depression is broadly consistent with

descriptions of depressive patients in the clinical literature. For example, there are Rado's (1928) and Fenichel's (1945) descriptions of depressives as 'love addicts', highly dependent upon external narcissistic supplies of love and approval. Jacobson (1971, 1975) has stressed the incomplete separation of the sense of self from that of the other in the depressive, the role of early disillusionment and also the typical oscillation between idealization and denigration of others. References to anger and rage are a traditional theme in the psychoanalytic literature on depression since Freud (1917) (see Mendelson's review, 1974). Regarding the early environment of the depressive, Cohen et al. (1954) described overly demanding parents, preoccupied with external appearances, and a similar account has been given by Cameron (1963). Arieti & Bemporad (1980) have recently described as typical the hostile clinging to a 'dominant other' and the fear of independent activity in the depressive. Beck's (1967) description of the repetitive negative thoughts about the self, the world and the future is relevant to the protective function of the depressive prison. Beck stresses that the maintenance of these beliefs requires highly active systematic distortions in information processing. However, if the self, the world and the future are seen as hopeless and worthless, then clearly the person can suffer no futher disappointment, and this can be seen as narcissistically protective. In the same vein Rowe (1978) has described the typically closed-off, imprisoning quality of the metaphors used by depressive patients to represent their experience of themselves.

This account of the depressive prison is in some ways similar to Fairbairn's (1952) description of certain patients' 'closed system run on hate'. Guntrip (1969) developed Fairbairn's views by emphasizing the depressed patient's clinging to a guilt-ridden sado-masochistic inner world of critical, punitive figures, as an escape from the more dreaded sense of weakness and emptiness. It may be noted that it is also an attempt to retreat from feelings of shame, humiliation and helplessness aroused either by failure to reach a highly valued goal or abandonment by a loved or needed person.

The model of the fragile self is supported by research evidence. The work of Wittenborn and his group lends empirical support to the concept of a depression-prone personality (Wittenborn & Maurer, 1977; Altman & Wittenborn, 1980; Cofer & Wittenborn, 1980). Two studies by Davis (1979 a,b) used cognitive processing rather than self-report measures and found evidence that at the onset of depression the self-schema is characterized by confusion rather than negativity. Models of depression based on negative self-evaluation are not consistent with these findings, whereas the work lends support to the model of a collapse in self-experience at the onset of depression, a transitional period of disorganization, and a defensive reorganization in the stage we describe as the depressive retreat. Further research evidence points to the ubiquitous association of anxiety with symptoms of clinical depression (Mendels et al., 1972; Weissman et al., 1975). The proposed model can account for this, in that the collapse in the self-schema produces, more profoundly than negative self-evaluation or lowered self-esteem alone, a threat to the integrity of the phenomenal self.

Implications for research

There are a number of research areas where this model of self-esteem regulation can be applied.

(1) Experimental studies of self-esteem and depressive affect need to be supplemented with studies of self-esteem regulation, examining the ways in which individuals maintain positive self-evaluation in the face of personally relevant, negative information (Post et al., 1980). Laboratory studies of the cognitive processes involved in encoding and recalling self-referent information have the ability to elucidate self-schema in depressed people (Derry & Kuiper, 1981). This type of work could usefully be

(2) Life-event research has tended to use response-based definitions of stress. The implication of the current work is that greater emphasis should be placed on individual differences in response to life-event adversity. Cath (1980) expresses a similar concern:

> ...it is not usually a single loss, a momentous event or set of circumstances which overwhelms an individual, but rather his nuclear pre-oedipal character which determines his tolerance and ability to cope with the vicissitudes of life (p. 58).

Such a view is, of course, quite compatible with current findings of a highly significant correlation between life-event stress and minor depressive disorder in general population samples, since much of the variance in depression remains unaccounted for by social stress hypotheses.

(3) Psychotherapy treatment research would be enriched by an awareness of narcissistic vulnerability and self-esteem regulation. Recent work developing measures of counselling outcome in Kohutian terms is to be welcomed, as psychotherapy outcomes relating to self-experience can be more easily evaluated (Patton *et al.*, 1982). The 'fragile self' model also implies that in psychotherapy process research more attention should be paid to patients' experience of self (e.g. shame, self-consciousness) within the psychotherapy session.

Implications for clinical practice

Although much has been written about psychotherapy with depressed patients (see particularly Jacobson, 1971, 1975; Blanck & Blanck, 1974; Arieti & Bemporad, 1980; Beck *et al.*, 1980) it is important to clarify some of the clinical implications of this particular model.

(1) Those forms of therapy which see *negative self-evaluation* as the only self-esteem problem in depression are likely to be successful over the long term only with mildly depressed patients whose current dysphoric episode is entirely related to an external trigger. Examples of patients for whom this relatively superficial approach might be helpful could include a student suffering depression after failing an important examination, or a person with no previous psychiatric history who is depressed postnatally or after a bereavement. We would expect depressions with a 'characterological' component (and these are in practice very common) to be difficult to treat successfully unless the issue of the experience of the self is confronted in the therapy.

(2) Those therapies which depend on self-reinforcement (e.g. Rehm's self-control model, 1977) will be particularly at risk of failure according to our formulation. Our prediction is that the hidden destructive envy will jeopardize such approaches. We feel that despite clinical descriptions of depressives as displaying 'passivity', the process of 'spoiling' is a very *active* one, whereby potentially useful, helpful experience or positive feedback is, sooner or later, devalued. The adaptive compliance of the patient together with his or her hunger for the therapist's approval may serve to produce a temporary improvement. Such gains can be systematically eroded by internal spoiling, *even from session to session*. The problem is not merely the availability of reinforcement but the capacity to take it in and use it. Put another way, it could be said that if a person were able to gain enjoyment or reassurance from 'reinforcers' they would not be depressed.

(3) There are several clinical implications when depressive states are seen as protecting the self. Within a psychoanalytic approach the interpretation of anger or hostility may only serve to intensify guilt to a dangerous degree unless the central self-protecting role of this is acknowledged. A useful working assumption may be that the depressive state is always a response *to* something. However, the closed-off 'depressive prison' by its very nature tends to obliterate links with whatever narcissistically threatening event has precipitated it. When in the grip of this the patient may indeed believe that they have

'always felt like this' and have no idea what has brought it about. It may then be essential repeatedly to make the links which the patient has lost and thereby show him or her what injurious events they are retreating from. Narcissistic injuries occurring within the context of the therapeutic relationship may be particularly important to note. Drawing links also with the past can facilitate the patient's understanding of his or her early emotional predicament which makes the depressive adaptation seem necessary. In this way the patient can be helped to experience more direct and simple feelings such as anger, disappointment and sadness in place of the paralysing depression.

Acknowledgements

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