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Social position and the common mental disorders with disability

Estimates from the National Psychiatric Survey of Great Britain

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Abstract *Background* Published studies linking the common mental disorders with social disadvantage lack basic comparability. This project aimed to estimate effect sizes and independence of social position markers as risk factors for common mental disorders. Disorders with disability were examined to identify groups with high clinical and policy priority. *Methods* Data from the 1993 household survey of psychiatric morbidity in Great Britain were analysed using logistic regression models, using traditional and more specific markers of social position. *Results* Of those with a common mental disorder, 22 % reported difficulty doing at least one activity of daily living, linked to their mental symptoms. In comprehensive statistical analyses, having two or more physical illnesses was associated with an odds ratio of 6.42 (95 % CI 4.34–9.51) for common mental disorder with disability, while odds ratios of 3 or more were present for being economically inactive or having had two or more recent adverse life events. Occupational social class was not an independent marker of raised rates of disorder. Similar patterns of result were present for common mental disorders irrespective of disability, although odds ratios were smaller. *Conclusions* Several specific markers of less privileged status are independently associated with raised rates of common mental disorders, with or without disability. There may be scope to target specific high-risk groups within comprehensive programmes to reduce mental health inequalities.

Key words socio-economic factors – mental disorders – epidemiology – disability

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Introduction

In this journal, Fryers et al. ('Social inequalities and the common mental disorders: a systematic review of the evidence' pp. 229–237) show that, despite apparently conflicting results from recent UK government surveys, the large published studies of social position and mental health from developed countries provide robust evidence linking the common mental disorders with one or other of the major indicators of social disadvantage. However, fundamental inconsistencies between studies made pooled estimates of the strength of associations between social position markers and the common mental disorders potentially invalid.

The common mental disorders often cause considerable distress, but only a proportion of epidemiologically identified 'cases' report experiencing disability in carrying out everyday activities [1]. Controversy exists over whether people fulfilling the 'positive' criteria on various survey instruments have disorders that would be recognised clinically as diagnosable 'cases', especially of treatable severity [1, 2]. As a result, Cooper and Singh have suggested that adding a disability dimension to the ascertainment of cases would yield more realistic estimates, at least for the purposes of health care policy making [2]. While many epidemiologically defined 'cases' may benefit from intervention of some kind, those who have disability would generally be seen as a

priority group in efforts to reduce the burden of mental disorders and health inequalities.

In the studies reviewed by Fryers et al., no estimates of the strength of association between markers of social position and the prevalence of disabling common mental disorder were possible. In this study, we aimed to estimate the relevant associations in the most detailed available dataset for Britain, the first UK National Psychiatric Survey [3].

Subjects and methods

The first household psychiatric survey in England, Wales and Scotland (excluding the Highlands and Islands) was carried out between April and September 1993. Private households in 200 postal sectors were included, and one person aged 16–64 years was selected from each household [4]. As a result, adults living in households with other adults were relatively under-represented. In all 12,730 adults were selected and 10,108 people (79.4 %) agreed to be interviewed.

The revised Clinical Interview Schedule (CIS-R) [5] was used to identify neurotic psychopathology in lay interviews. Survey respondents were questioned about 14 symptoms in the past month, and their frequency, severity and duration in the past week. Psychiatric diagnostic categories were derived by applying algorithms to responses, based on ICD-10 diagnostic criteria [6].

Physical illness or injury are frequent causes of disability, and are often present in people with a common mental disorder. While there is no objective way of establishing whether difficulty completing everyday tasks is due to physical or mental problems, asking the respondent provides perhaps the best possible guide. In our analyses, disability categories used were, therefore, *'disorder'*: present in those with any CIS-R defined diagnosis of 'neurosis' irrespective of disability, and *'disabling disorder'*: those with 'neurosis' also reporting that the mental symptoms had stopped them from 'getting on with things they used to do or would like to do' and also reporting difficulty with at least one specific 'activity of daily living'. Disability questions [7] covered difficulty with personal care; using transport; medical care (such as taking medicines or pills, having injections and changes of dressings); household activities (such as preparing meals, shopping, laundry and housework); physical activities (such as gardening, decorating or doing house repairs); dealing with paper work (such as writing letters, sending cards or filling in forms), and managing money (such as budgeting for food or paying bills).

By incorporating the person's own judgement, the disabling disorder category would, therefore, include, for example, at the less severe boundary, someone who has an anxiety disorder, feels that the mental symptoms stop them performing music for others, and reports difficulty using public transport but is able to use it. Many respondents reported difficulty with only one activity. As *'disabling disorder'* is a subset of all disorders, its prevalence was consequently lower (see results below).

Data relevant to classifying social position were available in four main areas, occupational status, education, employment and material circumstances. The Registrar General's occupationally based social class classification [8] was used for social status. Education was measured by age at leaving full-time schooling, and highest educational qualifications achieved. Employment status comprised working full time, working part time, unemployed or economically inactive. Material circumstances were indicated by housing type, housing tenure and car ownership. Initial exploratory analyses suggested appropriate grouping of responses; for example, age at leaving school was divided dichotomously at 16 years.

Physical disorder, stressful life events, social networks and other such factors were identified as known risk factors for the common mental disorders to be examined separately, while recognising that there are likely to be links between these and most of the other factors in the models.

All respondents were asked about the presence of chronic ill health, followed by the question: 'What is the matter with you?'. Responses were coded according to the body system affected, corresponding to ICD-10 [6] chapters. In this analysis, 'number of physical complaints' is the number of different ICD-10 chapter codes entered, excluding those for mental illnesses.

The perceived social support measure is based on the scoring of the responses to seven questions relating to the people the respondent knows, including family and friends [7].

The life events measure was based on questions about eleven stressful events during the past 6 months, including personal serious illness, injury or assault; a close relative suffering similarly; death of a parent, spouse/partner, child, brother or sister; death of a close family friend or other relative; marital separation or break-up of a steady relationship; serious problem with close friend, neighbour or relative; redundancy or sacking from job; unsuccessfully seeking work for more than 1 month; major financial crisis equivalent to loss of 3 months' income; problem with the police involving a court appearance; something valued being lost or stolen.

The economically inactive group included those who were permanently unable to work, retired, in full-time education or keeping house.

Statistical analysis

Weights to correct the data for the survey's complex sampling procedures and for non-response were provided by the Office for National Statistics, and initial analysis was carried out in SPSS [9]. While this method provides accurate estimates of percentages and odds ratios, errors can occur in the estimation of confidence intervals with complex samples [10]. To take account of sampling, a replicate weighting program (WesVar 3.0) [11] was used, which analyses multiple subsamples from the dataset to produce final estimates. The Jacknife sampling method was used, which is an established approach to the analysis of complex sample surveys [10]. In line with the general approach, multivariate backward deletion logistic regression models were developed on the weighted data in SPSS, with the resulting models tested in WesVar, to produce more accurate confidence intervals.

Results

Demographic details of the respondent sample are presented in Table 1.

Table 1 shows that 15.5 % (95 % confidence interval 14.6 %–16.3 %) of the general population aged 16–64 were identified by the methods described above as having a common mental disorder but only 3.4 % (95 % CI 2.9 %–3.8 %) of the general population had a disabling common mental disorder.

All the available markers of less privileged social position were individually associated with higher prevalence rates of the common mental disorders, after adjustment for age group and gender. In multivariate models of risks for all disorders, adjusting for gender, age and the competing markers (Table 2), all markers remained significant except occupational social class. Note that odds ratios were less than 2, except for the association with being unemployed. For disabling conditions, type of accommodation also ceased to be significant, and large odds (>2) were present for being unemployed or economically inactive.

Data on a range of known risk factors for neurotic disorder were available, including physical disorders, being a lone parent, having had recent stressful life events and lacking social support. In comprehensive

Table 1 Numbers (%) of people with all common mental disorders or disabling disorders, by age, sex and ethnicity

	Common mental disorder			Disabling disorder	
	Total	Number	%	Number	%
Total	10,108	1,563	15.5	340	3.4
Subject's age in 10-year groups					
55–64	1,589	212	13.3	73	4.6
45–54	1,910	313	16.4	82	4.3
35–44	2,148	358	16.7	70	3.3
25–34	2,520	400	15.9	63	2.5
16–24	1,941	280	14.4	51	2.6
Subject's sex					
Female	5,032	963	19.1	183	3.6
Male	5,076	600	11.8	157	3.1
Ethnicity					
White or European	9,414	1,459	15.5	315	3.3
Asian or Oriental	365	54	14.8	15	4.1
West Indian or African	158	26	16.5	4	2.5
Other	85	16	18.8	6	7.1

models including specific factors linked to the common disorders, adjusted for the factors in Table 2, having two or more physical illnesses was associated with an odds ratio of over 6 for disorder with disability, while odds ratios of 3 or more were present for being economically inactive or having had two or more adverse life events. Social position markers that remained independently significant in these models included having left full-time education at age 15 or younger and being unemployed (Table 3).

Odds for disorder in the major ethnic groups did not reach statistical significance.

Social inequality markers and high-risk subgroups

To reduce inequalities, there may be a case for targeting high-risk subgroups within a general programme to reduce morbidity if relatively small groups contribute a large proportion of the disabled cases. In assessing the importance of the above findings for efforts to reduce health inequalities in populations, evidence of excess risks is of limited use without measures of the proportion of the population who are subject to these risks, and the contribution of each marker to the total numbers of cases. It should be remembered, however, that the available markers overlap, with some individuals being, for example, lone parents, economically inactive and having had less education.

Table 4 shows the proportion in the survey population and the proportion in the two categories of disorder, for five high-risk factors emerging from this analysis. Only 8% of working-age adults reported physical disorders in two or more ICD-10 major disease categories, yet these respondents contributed 30% of cases

Table 2 Age- and sex-adjusted odds ratios for common mental disorders and disabling disorders, by markers of social position, from multivariate logistic regression analysis

	Common mental disorder	Disabling disorder
Variable and comparison category	OR (95% CI)	OR (95% CI)
Type of accommodation		
vs. detached house		
Flat, bedsit or other	1.31 (1.08–1.59)*	1.42 (0.96–2.10)
Terraced	1.19 (0.97–1.44)	1.40 (0.95–2.08)
Semi-detached	0.95 (0.78–1.16)	1.25 (0.84–1.84)
Housing tenure		
vs. owned		
Rent other	1.31 (1.08–1.59)*	1.22 (0.68–2.20)
Rent from LA or HA	1.46 (1.20–1.78)*	1.60 (1.08–2.37)*
Mortgage	1.17 (0.96–1.43)	1.23 (0.83–1.83)
Car or van ownership		
vs. two or more cars		
No cars	1.46 (1.20–1.78)*	1.80 (1.22–2.67)*
One car	1.20 (0.98–1.46)	1.27 (0.86–1.88)
Age left school		
vs. 16 years plus		
Up to 15 (including no education)	1.32 (1.09–1.61)*	1.72 (1.41–2.09)*
Work status		
vs. working full time		
Economically inactive	1.68 (1.38–2.05)*	4.26 (2.88–6.31)**
Unemployed	2.16 (1.78–2.63)**	2.97 (2.01–4.40)**
Working part time	1.20 (0.98–1.46)	1.13 (0.76–1.67)
Occupational social class		
vs. groups I + II		
Never worked	0.57 (0.31–1.02)	0.76 (0.35–1.67)
IV + V	0.93 (0.77–1.13)	1.07 (0.72–1.59)
III M	0.97 (0.80–1.18)	0.91 (0.75–1.11)
III NM	1.17 (0.96–1.43)	1.13 (0.76–1.67)

* statistically significant odds at $p < 0.5$; ** odds greater than 2.0

Table 3 Odds ratios (95% CI) for the presence of each category of neurotic disorder, from comprehensive multiple regression models

Variable and reference category	Category	Neurotic disorder	Disabling disorder
		OR (95% CI)	OR (95% CI)
Age group			
vs. 16–23	55–64	0.62 (0.42–0.92)*	0.71 (0.48–1.05)
	45–54	1.02 (0.84–1.24)	1.15 (0.64–2.07)
	35–44	1.06 (0.87–1.29)	1.05 (0.58–1.89)
	25–34	1.07 (0.88–1.30)	0.92 (0.62–1.37)
Gender			
vs. male	Female	1.68 (1.38–2.05)*	0.92 (0.76–1.12)
Tenure			
vs. owned	Rent other	1.31 (1.08–1.59)*	1.04 (0.58–1.87)
	Rent from LA or HA	1.34 (1.10–1.63)*	1.40 (0.95–2.08)
	Mortgage	1.17 (0.96–1.43)	1.21 (0.82–1.79)
Number of cars or vans			
vs. two or more cars	No cars	1.23 (1.01–1.50)*	1.39 (0.94–2.06)
	One car	1.09 (0.90–1.33)	1.11 (0.75–1.64)
Age left education			
vs. 16 years or more	Up to 15 (including no education)	1.26 (1.03–1.53)*	1.60 (1.32–1.95)*
Work status			
vs. working full time	Economically inactive	1.42 (1.17–1.73)*	3.32 (2.24–4.91)**
	Unemployed	1.30 (1.07–1.58)*	1.63 (1.10–2.42)*
	Working part time	1.13 (0.93–1.37)	1.03 (0.70–1.53)
	Unknown	0.00 (0–0)	0.00 (0–0)
Ethnicity			
vs. White/European	Other	1.17 (0.65–2.11)	2.97 (1.12–7.92)**
	Asian/Oriental	1.15 (0.78–1.70)	1.46 (0.67–3.20)
	West Indian/African	0.79 (0.54–1.18)	0.66 (0.30–1.45)
Residence			
vs. urban	Semi-urban or rural	1.14 (0.94–1.39)	1.19 (0.97–1.44)
Family type			
vs. couple no children	Child of lone parent	0.97 (0.66–1.44)	0.74 (0.34–1.62)
	Child of couple	0.89 (0.60–1.31)	1.45 (0.54–3.86)
	One person	1.17 (0.79–1.74)	1.55 (0.86–2.80)
	Lone parent	1.43 (1.18–1.74)*	1.97 (1.10–3.55)*
	Couple 1+ children	1.14 (0.77–1.69)	1.79 (0.99–3.22)
Household size			
vs. one	5–10	0.73 (0.50–1.09)	0.61 (0.28–1.33)
	Four	0.69 (0.47–1.02)	0.55 (0.25–1.20)
	Three	0.81 (0.55–1.20)	0.68 (0.31–1.50)
	Two	0.79 (0.53–1.16)	1.04 (0.48–2.28)
Number of life events			
vs. none	2+	3.16 (2.60–3.84)**	3.25 (2.20–4.82)**
	One	1.75 (1.44–2.13)*	1.80 (1.48–2.19)*
Social support			
vs. no lack	Unknown	1.46 (0.99–2.16)	2.03 (0.93–4.45)
	Severe lack	2.14 (1.76–2.60)**	2.23 (1.50–3.29)**
	Moderate lack	1.25 (1.02–1.52)*	1.12 (0.75–1.65)
Number of physical illnesses			
vs. none	Two or more	3.46 (2.84–4.20)**	6.42 (4.34–9.51)**
	One	1.86 (1.53–2.26)*	2.69 (2.21–3.27)**

* statistically significant odds at $p < 0.5$; ** odds greater than 2.0

Table 4 High-risk population groups as percentages of the sample and cases

	% of population n = 10,108	All common mental disorder n = 1,562 100 %	Disabling common mental disorder n = 341 100 %
Lone parents	6	10	12
Two or more physical disorders	8	16	30
Unemployed	9	14	16
Economically inactive	23	31	52
Left school at age 15 or earlier	30	36	52

of disabling neurotic disorder. Those with physical diseases, lone parents and the unemployed together comprised 20 % of the population, but contributed 36 % of all people with neurotic disorder and 51 % of those with disabling disorder.

Discussion

This study explored the most comprehensive available source of nationally representative psychiatric data from Britain, the first household psychiatric morbidity survey (a second national survey was undertaken in 2000 and the published report indicates that the data appear similar and confirm the broad findings of the 1993 survey [12]). The analysis of the common mental disorders (neurotic disorders) was designed to incorporate evidence of general limitation due to mental symptoms, as a means of addressing concerns that epidemiological survey instruments may be over-inclusive in identifying 'cases' [1, 2, 13].

The study has shown that less than a quarter of CIS-R identified cases of common mental disorder in Britain reported difficulty doing at least one activity of daily living linked to their mental symptoms. In comprehensive statistical analyses, having two or more physical illnesses was associated with an extraordinarily high odds ratio (6.42; 95 % CI 4.34–9.51) for common mental disorder with disability, while odds ratios of 3 or more were present for being economically inactive or having had two or more recent adverse life events. Occupational social class was not an independent marker of raised rates of disorder. These results suggest that there may indeed be scope for targeting subgroups at high risk of suffering from disabling common disorders, within more comprehensive approaches.

A number of limitations of this work need to be considered. The survey data are cross-sectional and, thus, the results reported reflect statistical associations between characteristics enquired about at one point in time. A longitudinal study of prior risks and subsequent mental disorder might produce a different set of estimates. On the other hand, if the common mental disorders partly reflect contemporaneous reactions to social stresses, then the longitudinal approach would also have limitations. The data are all based on respondents' self-reporting, and different results could also emerge if professional validation of syndromes or objective confirmation of levels of functioning were available.

Another limitation of this analysis is that the qualified definitions of 'caseness' are relatively crude, but they do provide a systematic response to the problems of possible over-inclusion in epidemiological surveys. The 'disabling disorder' group was defined as the subset of respondents within those with a CIS-R defined diagnosis of 'neurosis', who reported that their mental symptoms had stopped them from 'getting on with things they used to do or would like to do' *and also* that they had difficulty with at least one specific 'activity of daily living'. The very high odds of disabling disorder in those with physical illness could not, therefore, be due to the disability caused by physical illness alone, as a limitation due to mental factors had to be present.

Further difficulties exist in defining and analysing 'social inequality'. In this analysis, we have concentrated on 'social class' or social position, based on the well-established theories of the existence of hierarchies within contemporary society [14], evident in the distribution of material resources and education as well as social status. As these notions are broad and overlapping (although somewhat weighted to specific elements within social position), it is inevitable that more specific measures will tend to displace broader measures in statistical analyses. The more specific markers can be useful in identifying subgroups that may have special characteristics of policy importance. In addition, it is true, of course, that some factors, including adverse life events, are themselves associated with the markers of social position. Adjusting for them in the comprehensive models is, thus, likely to provide a lower band for the size of the association between social position markers and neurotic disorder. A similar point can be made in relation to unemployment, especially recent unemployment, as this may be a stressful state as well as being a marker of social position. However, in this study, 13.7 % of people in social classes IV and V (manual occupations) reported being unemployed, compared to only 4.3 % in social classes I and II (professional and managerial).

A further limitation in this analysis may be the limited range of risk markers in the available data, which excludes, for example, caring status (carers have high rates of depression [15]), histories of abuse and biological susceptibilities.

A further issue is that analyses could have been undertaken for men and women separately, given the reported higher prevalence rates in women. However, this study's disabling disorder category shows no significant difference in prevalence by gender, confirming previous work suggesting a greater willingness among women to report less severe psychological symptoms [16]. Combining these groups and 'correcting' for gender also provides needed statistical power in analyses of the relatively uncommon disabling disorders.

Having acknowledged the limitations of the analysis, we should also note its strengths. These include national population representativeness, and the inclusion of a fairly comprehensive set of validated markers of neurotic disorder, disability and social position. The original survey's large size also provides statistical power. The analysis itself identifies both broad markers as well as more specific identifiers in multivariate models.

In all cross-sectional analyses, directions of causation remain undefined: might it be, for example, that common mental disorder causes economic inactivity, rather than the other way round? Most of the limited available evidence [17, 18] suggests that the major mechanism is of aspects of social position in population groups increasing the risks of mental disorder. There is

contrary evidence, however, in that neurotic disorder causes considerable sickness absence and labour turnover [19], and, therefore, it is likely also to cause unemployment and economic inactivity.

Irrespective of causation, identifying subgroups with very raised risks suggests the possibility of targeting or prioritising efforts to reduce the enormous morbidity due to the common mental disorders. Our analysis shows that lone parents, those with two or more physical diseases, and those who were unemployed together made up only one-fifth of the population in 1993, but contributed half of the cases of disabling neurotic disorder. More work is clearly needed to develop and evaluate methods of targeting within broader preventive and treatment programmes for the common mental disorders.

Conclusion

Analysis of the most detailed British mental health dataset suggests that the most robust markers of social inequality in the prevalence of the common mental disorders (with or without disability) are employment and education, rather than occupational social status. The substantially higher prevalence rates in lone parents, those with two or more physical diseases, and those who were unemployed suggest that there may be scope for targeting, within comprehensive efforts to reduce inequalities due to the common mental disorders.

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