

Adolescent Girls I Self-Reported Mood Disturbance in a Community Population

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Background. This study was undertaken to fill gaps in our knowledge of the rate of mood disorder in teenage girls in transition from school to further education, employment or unemployment.

Method. Girls aged 15–20 years ($n=529$) whose names were drawn from general practitioner age/sex registers were interviewed at home and completed the Great Ormond Street Mood Questionnaire. Their mothers completed the 28-item General Health Questionnaire (GHQ). Social background variables were obtained.

Results. Of the girls, 20.8% scored over the cut-off point previously established to indicate risk of psychiatric disorder. Scoring over the cut-off point was not associated with age or parental social class. It was associated with parental separation/divorce ($P<0.004$), with maternal self-report on the GHQ ($P<0.001$), and with parental unemployment ($P<0.04$). Lowest self-report scores were obtained by girls who had left school and were in employment ($P<0.01$).

Conclusions. About one in five of girls aged 15–20 are at risk of affective disorder. Self-reported mood disturbance is associated with a wide range of social and familial background variables, but not with age or parental socioeconomic status.

There is increasing evidence that depressive disorders often begin in late childhood and adolescence (Harrington, 1992) and that they have a high rate of recurrence into adulthood (Garber *et al*, 1988). The epidemiological characteristics of depressive disorders appear to change during adolescence. In particular, while there is an equal sex ratio in childhood, in adulthood women sufferers outnumber men by 2 or 3:1 (Gelder *et al*, 1989).

Adolescence is a time of social as well as biological transition. Most teenagers pass from full-time education to employment or unemployment, and some leave home during this period. However, they do so at different rates, so that it is possible to examine the effect of these social transitions on young people who are of the same chronological age, to see how the rates of depressive disorder are affected.

In the only UK study specifically focused on depressive disorders and using standardised measures (Cooper & Goodyer, 1993), the estimated one-month prevalence in girls aged 11–16 was found to be 3.6%, and the 11-month prevalence 8.9%. In the more numerous studies from North America (Deykin *et al*, 1987; Kashani *et al*, 1987; Fleming *et al*, 1989; Whitaker *et al*, 1990), higher rates have been found. Fleming *et al* (1989) found that 1.8% of children aged 12–16 had depressive disorders with high diagnostic certainty, 7.8% with medium certainty and 43.9% with low certainty.

As far as mood disturbance is concerned, studies in the community have indicated that feelings of misery

and unhappiness are commonly reported by a significant proportion of mid-stage adolescents. More than 40% of children aged 14–15 in the Isle of Wight study described considerable misery, a far higher rate than the 14% reported by parents (Rutter *et al*, 1976).

In a large sample of high school students, Kandel & Davies (1982) found that 15% of 13 to 18-year-olds reported severely depressed mood; Freeman *et al* (1982) found that 16% of black urban adolescents aged 14–18 years reported high levels of depression.

Factors associated with psychiatric disorders in adolescence

Age

There is evidence that affective disorders are uncommon in childhood, and increase after puberty (Rutter *et al*, 1976). In particular, among girls the rates of depressive and anxiety disorders rise after puberty. Some studies have reported higher rates of affective disorders for young people in their 20s than for early adolescents, suggesting a continuation of the rise with increasing age (Frerichs *et al*, 1981). Kandel & Davies (1982) reported a rising rate of self-reported depressive mood from age 13 to 18, but Freeman *et al* (1982) found no age differences in urban black students aged 15–18 years. In this latter study the scores of the adolescents in all age groups were higher than a comparison group of young adults.

Death or divorce of parents

Aro & Rantanen (1992) found that self-reported distress in school students aged 14–16 years following a parental death was marked in boys, but that girls who had lost their parent(s) did not differ from the girls in intact families. Adolescents aged 14–16 years old who had experienced divorce in the family reported more distress, lower self-esteem and a poorer school performance than those from intact families; this was particularly marked in the girls.

Psychiatric disorders in parents raise the risk of psychiatric disorders in children, and there is some degree of specificity. For example, depression in the parent increases the risk of depression in the child, and the same occurs with panic or anxiety disorders (Weissman *et al*, 1984).

Transition from education to employment

There is good evidence from questionnaire data (Banks & Jackson, 1982) that failure to find employment after leaving school is linked with higher rates of minor psychiatric disorder in young people with low school achievement. However, there is little or no information allowing comparison of general rates of disturbance between employed and unemployed youngsters, and youngsters of the same age still in full-time education.

Socioeconomic status

In adult populations a weak inverse relationship between depressive disorders and socioeconomic status has been observed (Brown, 1988), and some studies of adolescents appear to confirm this. Kandel & Davies (1982) found that 14 to 18-year-olds from families with low annual incomes were significantly more likely to report themselves as depressed. In Britain, families on low incomes include the large majority of single-parent households and those in which the chief wage-earner is currently unemployed. Among children aged 13–15 completing self-report questionnaires measuring depressive symptoms, Garrison *et al* (1989) found lower socioeconomic status to be associated with higher scores.

The current study

We report data collected in the first (screening) interview of a study of a community population of girls in their mid- and late-adolescence (some of whom were still in education and some of whom had moved to employment or unemployment), which was designed to investigate the personal, educational,

employment and family variables relating to mood disturbance and psychiatric disorder. The aim was to identify the prevalence of mood disturbance in girls of this age, and to investigate whether there were significant relationships between self-reported mood disturbance and age, socioeconomic status, the marital situation of the girl's parents, and other social variables.

A separate focus concerned the prevalence of serious eating disorders, and the findings on this aspect of the work have been reported elsewhere (Monck *et al*, 1990). A subgroup of girls identified from the first interview as at risk of disorders of mood was given a second, more intensive interview. The results of this part of the study, which looked at the links between psychiatric disorder in teenage girls and severely stressful life events and difficulties, maternal distress and the quality of the parents' marriage, are reported separately (Monck *et al*, Part II, this issue).

Method

Sample selection

The sample was drawn from the age/sex registers of eight general practices in north and east London. The areas covered varied considerably in social class, and educational and employment opportunities. The practices also varied in size and in the range of facilities available to patients.

In each practice a list of all the girls aged between 15 years and 19 years 11 months was compiled. This list was given to the general practitioners (GPs) and practice secretaries who excluded families in which it was known that the girl or her 'key' relative¹ had marked learning difficulties, or could not speak or read sufficiently good English for the interview. Some families were excluded later when communication problems were revealed.

The interview

The girls and their key relatives (92% biological or surrogate mothers) were sent separate letters explaining the aims of the study. The semi-structured interview was held with each girl and her key relative together in the girl's home.

1. The key relative was defined as the mother (or surrogate mother), but in households in which there was no mother, key relatives were defined as fathers (or father substitutes), other relatives acting *in loco parentis*, husbands or boyfriends. Eight girls lived alone or in hostels; there was no key relative in these households.

The interview lasted about one hour and covered the sociodemographic information for the household, and the chief wage-earner's most recent employment history. Information was also obtained on the girl's schooling, and details of the public examinations and tests the girl had attained, including sporting or music exams. Both informants were asked about the health of the girl, and the number of attendances in the previous year at the GP's surgery or any other health clinics, including those offering family planning advice, was recorded, with reasons for the consultation. The girl was also asked about her employment history, including part-time or full-time jobs while still at school or since she left education. Both informants were asked to complete the questionnaires described below, the girls for themselves and the key relatives for the girls.

Measures

The self-report questionnaires used were as follows:

Great Ormond Street Mood Questionnaire (GOSQ)

This was validated during earlier pilot work, for use with the 15 to 16-year-old age group. To each question the response can be 'never', 'sometimes', 'frequently', or 'nearly all the time', scoring 0–3; four questions score in reverse (see Table 1). The GOSQ contains questions on anxiety, depression and psychosomatic symptoms, as well as feelings of health and well-being over the previous month. The derived score does not allow a distinction to be made between types of psychiatric disorders. Pilot work with a school population of 262 girls indicated that a cut-off point of 24/25 gave a specificity of 79.6% (non-cases correctly identified) and a sensitivity of 56.2% (cases correctly identified). Further details were reported in Mann *et al* (1983).

General Health Questionnaire (GHQ)

Key relatives completed the 28-item GHQ on themselves, and the girls on their relatives. Responses are scored 0 or 1, and a cut-off point of 4/5 defines those at risk of psychiatric disorder (Goldberg & Hillier, 1979).

The Eating Attitudes Test (EAT)

Garner *et al* (1982) constructed a 26-item questionnaire with scores on each item ranging from 0–3; a cut-off point of 20/21 identifies those at risk of anorexia nervosa. This questionnaire was validated during an earlier pilot phase for use with

a 15 to 16-year-old population (Mann *et al*, 1983). Girls and key relatives completed the questionnaire on themselves and on each other. The results of this part of the study have been reported in Monck *et al* (1990).

Clinical Interview Schedule

This standardised psychiatric interview (Goldberg *et al*, 1970) was used to assess the presence and severity of affective symptoms in the girls in a second interview held with selected families only. The schedules were submitted to two psychiatrists (PG and NR) who made a predominant diagnosis using ICD-9 criteria (World Health Organization, 1978), and assessed overall severity. Social impairment criteria were taken into account in rating the presence or absence of disorder. Comorbid diagnoses were ignored, and analyses relate to predominant diagnoses only (see Part II, this issue).

Statistical methods

For the purposes of analysing independent categorical variables presented in contingency tables, the χ^2 test of association was used. In certain circumstances, when paired data sets were being compared, the McNemar test for significance of change was employed (Gardner & Altman, 1989). Agreement between ratings on mood disturbance made independently by mother and daughter were analysed using the Kappa statistic (Fleiss, 1981).

Results

Of 757 girls initially identified, 112 (14.8%) were excluded because of a poor command of English by the family, or because the identified subject proved to be the wrong age or sex.

Among 645 girls who were approached for an interview, 529 (82%) accepted. Of these, 94% lived with at least one biological parent, 1% lived with adoptive parents, 2% lived with husbands or boyfriends, 1% lived alone, and 2% lived in other households. Losses and refusals were not related to age, but may have been affected by socioeconomic class. Although no social class data were available for those families who refused, the refusal rate was highest (25%) in the practice with the most deprived catchment area.

Compared with the general population, social classes II and III (non-manual) were slightly but not significantly overrepresented. However, the proportion of older girls who were attending further or higher education colleges was below the national

Table 1
Responses (%) to individual items on the Great Ormond Street Mood Questionnaire, when asked "How have you been feeling this last month?" (n = 259)

Item	Never (%)	Sometimes (%)	Frequently (%)	Nearly all the time (%)
1. I feel nervous when I meet new people	19	62	11	7
2. I suffer from headaches	21	66	12	1
3. *I enjoy life	1	14	20	66
4. I have problems getting off to sleep, or wake in the night	45	41	8	6
5. I feel a failure at things	30	63	5	2
6. *I enjoy the company of boys	2	36	34	28
7. I feel I get the blame for things	22	61	12	5
8. I feel sick with worry and nerves	60	34	4	2
9. Other people complain about me fighting	86	11	2	1
10. I wish I could make friends more easily	50	41	6	3
11. I suffer from stomach aches which are not period pains	63	33	3	1
12. I feel really miserable and unhappy	39	53	7	1
13. I am moody, I go up and down in my feelings	24	53	18	5
14. I am frightened of being alone	44	43	7	6
15. *I feel fit and healthy	6	37	20	38
16. I am irritable, and fall out easily with other people	57	39	3	1
17. I cry or feel like crying	29	58	9	3
18. I worry there is something wrong with my health	57	36	4	2
19. I feel hopeless about my future	57	34	7	2
20. I do not have much energy and get tired easily	52	37	9	3
21. I have thought of ending my life	88	10	2	<1
22. I feel tense and jittery	60	36	4	<1
23. *I feel sure I can do things well	3	53	28	15
24. I want to run away from home, or walk out	69	25	4	2
25. I get into trouble with people in charge at school/work	75	21	3	1
26. I feel nobody loves me or likes me	72	24	3	2
27. I am a bit of a bully	81	17	2	<1
28. I feel lonely	58	36	5	1

*These questions score in reverse.

average, which suggests an underrepresentation of social class groups I and II, from which most such students are drawn. There were roughly equal numbers of 15, 16, 17, 18 and 19-year-olds.

Self-reported depressive feelings

Of the 529 girls, 109 (20.8%) had scores over the cut-off point on the GOSQ, indicating they were at risk for mood disorder; 19 (3.6%) of the total sample also had high scores on the EAT (Monck *et al*, 1990).

Of the 484 girls who lived with their mothers (including foster, step- and adoptive mothers), 101 scored above the cut-off point on the GOSQ, giving a similar rate of the risk of mood disturbance (22.6%) as the total sample.

Table 1 shows the proportions of girls who checked individual items on the GOSQ.

While the self-report measure (GOSQ) was available for all 529 girls, additional information from a clinical assessment of psychiatric disorder was available for those girls who had a second interview, all of whom lived with their mothers (see Part II, this issue). Briefly, girls were selected who had scored over the cut-off point on the GOSQ and/or the EAT, with a similar number of low-scoring controls matched for age within each general practice. At this second interview stage, 69 girls with high GOSQ scores and 74 girls with low GOSQ scores were seen. The interviews were undertaken by three trained researchers and subsequently rated by two psychiatrists (PG and NR). The second interviews and the psychiatrists' ratings were completed without knowledge of the girl's self-rating GOSQ score.

Using ICD-9 criteria, the psychiatrists rated 28 (40.6%) of the high scorers and 10 (13.5%) of the

low scorers as suffering from psychiatric disorders; this difference was significant ($\chi^2 = 12.05$, 1 d.f., $P < 0.0005$). The specificity of the self-report version of the GOSQ was 60.9% and the sensitivity was 73.6%, compared with 79.6% and 56.2% respectively, in the pilot study. The positive predictive value of the GOSQ was 74%.

Among the 38 girls with psychiatric disorders at the moderate or severe level of caseness, 24 (63%) had neurotic depression, nine (24%) had anxiety/phobic states, one (3%) showed mixed disturbance of emotions specific to childhood and adolescence, and four (11%) had miscellaneous other conditions (two with conduct disorder, one with asthenic personality disorder and one with physiological malfunction arising from mental factors).

The mothers' GOSQ reports on the girls were compared with the psychiatrists' judgement. The specificity of the mothers' reports on the girls was 84.6%, but the sensitivity was only 35.1%, and positive predictive value was 44.8%. A comparison of the self-reports from the girls and the reports of their mothers shows that the former are more accurate in screening for disturbed mood, and this is the reason why more attention has been given here to self-report.

Extrapolation of the figures on psychiatric disorders to the rest of the screened population gave an overall minimum one-year prevalence rate of 18.9%; it is important to emphasise that this rate does not apply to the whole of the 15 to 20-year-old population, but only to those girls who lived with their mothers.

Factors associated with questionnaire scores

Age

There was no clear age gradient, but there was a non-significant tendency for the 15-year-olds to report a higher rate of mood disturbance (25%) than other age groups (19%).

Education and employment

The proportion of girls with high GOSQ scores was significantly greater for those who were still at school than for those who had left school (26% v. 18%; $\chi^2 = 4.97$, 1 d.f., $P < 0.03$). The overall low rate of self-reported mood disturbance among the girls who had left school masked a significant difference in the rates for those in work and those who were unemployed. Table 2 shows that rate of self-reported mood disturbance among the unemployed girls was

significantly higher than the rate among the employed. For girls who were of an age to have left school if they had wanted to (over 16), but were still in full-time education (school or college), the rate of self-reported mood disturbance lay between their employed and unemployed contemporaries (Table 2).

Social class of the household

There was no significant relationship between the girls' self-reported mood disturbance and the social class based on the occupation of the chief wage-earner (Office of Population Censuses and Surveys, 1980). This analysis was undertaken for the whole population, so the chief wage-earner was not exclusively a parent; in the cases where the girl was working and living alone, social class was assessed on her own job. In those cases in which the girl lived away from her family but had student status, her social class was assessed on the chief wage-earner in her family of origin. However, among 496 girls who were living with one or both parents (including foster or adoptive parents), parental unemployment had a significant effect, with girls living in a household where the chief wage-earner was unemployed having the highest rates (Table 3).

Housing

Details of housing tenure were collected for 519 (98%) of the girls; some informants felt this to be private information they did not wish to divulge. Of these 519 households, 318 (61.3%) were owner-occupiers, 33 (6.4%) were in private rented accommodation, and 158 (30.4%) were in council housing. These proportions were very similar to figures for Greater London (Office of Population Censuses and Surveys, 1983). High GOSQ scores (either from the girls or from their key relatives reporting on the girls) were not associated with different ownership patterns. Information was available on shared facilities for all households. Of the 17 girls who lived in families with shared kitchens, bathrooms and/or lavatories, six (35%) reported high GOSQ scores, compared with 20.3% (104/512) of those families with their own facilities, but this difference did not reach significance.

Marital status of parents

Table 4 shows that among the group of girls ($n = 31$) whose parents were currently separated, the rate of self-reported mood disturbance was high (39%), and

Table 2
Girls' self-reported mood disturbance and education/employment status (*n* = 393)¹

Self-report	School ¹		College		Employed		Unemployed		Total
	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)	
No mood disturbance	68	(78)	64	(78)	167	(89)	23	(64)	321
Mood disturbance	19	(22)	18	(22)	21	(11)	13	(36)	71
Total	87	(100)	82	(100)	188	(100)	36	(100)	393

1. Only those girls who had stayed on at school after school-leaving age are included. $\chi^2 = 15.63$, 3 d.f., $P < 0.01$.

Table 3
Daughters' self-reported mood disturbance and parents' unemployment (*n* = 496)¹

Girls' self-report	Chief wage-earner		Total
	Employed (%)	Unemployed (%)	
No mood disturbance	337 (81)	58 (70)	395
Mood disturbance	77 (19)	24 (30)	101
Total	414 (100)	82 (100)	496

1. 496 girls who lived with parents. $\chi^2 = 4.169$, 1 d.f., $P < 0.04$.

among those whose parents were currently divorced the rate was not much lower (32%). Only 15% of the girls who had lost one or both parents through death reported their mood as disturbed, while the girls whose parents were together showed a similarly low rate (18%). (As with parents who were separated or divorced, the term 'parents together' refers to those key relatives *in loco parentis*.)

The age of the girl at the time of her biological parents' separation was related to self-reported mood disturbance. Girls whose parents had parted when they were aged under ten showed significantly higher levels of mood disturbance (29/67, 43%) than those whose parents had parted when they were older than ten years (8/47, 17%; $\chi^2 = 8.69$, 1 d.f., $P < 0.004$).

The link between self-reported mood disturbance and the current separated or divorced status of parents only appeared when the girl was actually living with the parent. There were 34 girls in the study living away from their parents. Of the seven with divorced and separated parents, only one (14%) had a high GOSQ score. Of the 27 girls whose parents were together, six (22%) had a high GOSQ score.

The non-significant lower rate of disturbance in the living-away daughters of divorced and separated parents is interesting, but the numbers here are small.

Self-reported parental depression

An indication of the current affective state of the key relative with whom the girl was living was known from the 28-item GHQ filled in at the screening interview. Among the 497 biological parents who completed this questionnaire, 161 (32.4%) scored above the cut-off point which put them at risk of a clinically significant affective disorder. (Since 98% of these biological parents were mothers, they will be referred to as 'mothers' hereafter). There was a positive association between scores from mothers who completed the GHQ for themselves, and scores from the girls on the GOSQ (Spearman's $r = 0.21$, $P < 0.001$).

A significant association was found between the mother's current status of being widowed, divorced or separated (compared with being married) and her own high score on the GHQ ($\chi^2 = 7.65$, 1 d.f., $P < 0.006$). It was therefore important to test the independence of the relationship of these two variables with the girls' self-reported mood disturbance. After allowing for the mothers' high GHQ score, there continued to be a significant relationship between the mothers' 'partnership' status and the girls' self-reported mood disturbance (mothers' self-reported high GHQ score: $F = 11.40$ (1 d.f.), $P < 0.001$; parents' marital situation: $F = 5.04$ (1 d.f.), $P < 0.002$; the 2-way interaction of these variables was non-significant).

Mothers' perception of daughters' mood disturbance

There was a low positive association between the girls' self-report GOSQ scores and the key

Table 4
Daughters' self-reported mood disturbance and the marital status of parents ($n = 524$)

Girls' self-report	Parents together (%)		Parents separated (%)		Parents divorced (%)		One or both parents dead (%)		Total
No mood disturbance	330	(82)	19	(61)	45	(68)	22	(85)	416
Mood disturbance	71	(18)	12	(39)	21	(32)	4	(15)	108
Total	401	(100)	31	(100)	66	(100)	26	(100)	524*

1. Information was not available for 5 girls.
 $\chi^2 = 13.77$, 3 d.f., $P < 0.004$.

relatives' GOSQ scores for the girls (Kappa = 0.26, $P < 0.0001$). Once the large number of agreements on low scores were taken into account, it did not appear that the key relatives were very alert to the mood disturbance reported by the girls. Table 5 shows that among the 462 cases with full responses on both questionnaires, nearly two-thirds (63%) of the high-scoring girls were given low scores by their key relatives, of whom 97% were parents, and 92% were mothers. Seventy-five of the key relatives gave the girls a high GOSQ score, but in only 35 (47%) of these cases did the girls give themselves a high GOSQ score. Agreement between key relatives and the girls on the latter's mood disturbance just failed to reach a significant level (McNemar test: $\chi^2 = 3.61$, $P = 0.06$).

Suicidal ideation

On the distinct and important issue of suicidal ideation, the largest group of key relatives and girls (421, 85%) agreed that the girl 'never' had suicidal thoughts, and a small number of key relatives recorded that she 'sometimes' did (7, 1.4%). In 19 of the remaining 68 cases (28%) the key relative reported some suicidal ideation and the girl reported none, while 41 girls (60%) reported some suicidal ideation while the key relative reported none. In the remaining eight cases, disagreement between the two informants centred on the frequency of suicidal ideation. The personal and family factors associated with self-reported suicidal thoughts have been reported previously (Monck & Graham, 1988).

Absenteeism and attendance at GPs' surgeries

When girls had missed more than four weeks from school, college or work in the previous 12 months they were significantly more likely to have high GOSQ scores ($\chi^2 = 10.02$, 1 d.f., $P < 0.002$). This group obviously included some of those who were currently unemployed, which we have already noted

Table 5
Reports from the girls and their key relatives of disturbed mood in the girl using the GOSQ

Girls' report of mood disturbance	Key relatives' reports of girls' mood disturbance		Total
	Absent	Present	
Absent	327	40	367
Present	60	35	95
Total	387	75	462

McNemar: $\chi^2 = 3.61$, $P < 0.06$.

was associated with high GOSQ scores (Table 2). However, when the currently unemployed were excluded, there was still an association between absenteeism and high GOSQ scores ($\chi^2 = 8.69$, 1 d.f., $P < 0.004$).

Information on attending GPs' surgeries was available for 513 girls (the other 16 chose not to provide this information). Over the previous 12 months only 113 (22%) of the girls had not attended at all; among the remaining girls, 312 (61%) had been between 1 and 4 times, 61 (12%) had been between 5 and 9 times, and 27 (5%) had been ten times or more. A high GOSQ score was significantly associated with higher rates of attendance ($\chi^2 = 11.49$, 3 d.f., $P < 0.01$). Girls who had left school were significantly more likely to visit their GP than those still at school ($\chi^2 = 4.96$, 1 d.f., $P < 0.05$). Among those who had left school there were no differences in the number of contacts with the GP between those in work, at college, or the unemployed.

Among the girls who had left school there was a significant tendency for those with high GOSQ scores to visit their GP more frequently than those with low scores ($\chi^2 = 22.3$, 3 d.f., $P < 0.001$); this difference was not found among the (largely younger) girls still at school. Other health issues are reported in more detail elsewhere (Monck, 1990). Neither the number of admissions to hospital before the age of five, nor

the length of time spent in hospital or away from their mother before the age of five, related to the girls' current self-reported mood disturbance.

Discussion

The prevalence of self-reported mood disturbance in this community sample of 15 to 20-year old girls was found to be 20.8%, and a similar rate of 22.6% was found among those who lived with their mothers. These figures are not dissimilar to those reported from other studies of the age group. Kandel & Davies (1982) found 19.7% were "bothered about feeling sad or depressed". The Isle of Wight studies reported that 23% of the girls aged 14–15 "often feel miserable or depressed" (Rutter *et al*, 1976).

A trend of increasing rates of self-reported mood disturbance with rising age within this teenage population had been predicted, but was not confirmed. In this study, the youngest adolescents in the sample (aged 15 years) showed the highest rate of self-reported mood disturbance. Furthermore, there was evidence that the youngest among the 15-year-olds (those in their fourth year rather than their fifth year at secondary school) showed the highest rate of all, but in fact neither of these age differences was statistically significant. Between 16 and 20 years the rate was at a lower and relatively stable level. The important differences in levels of self-reported mood disturbance between the girls at school or in work and those who were unemployed has been noted in other studies (Donovan *et al*, 1986). Banks & Jackson (1982) found that unemployment after school was causally related to depressed mood, but no such conclusion can be drawn from the present data.

The results of this study show that there was a strong correlation between the self-reported mood disturbance of adolescent girls and the self-reported depressed mood of a key relative living in the same household. This remained true when only the parents were considered, and other key relatives were excluded. Kandel & Davies (1982) observed a similar association in a sample of high school students aged 13–19 and their parents. It is not possible, however, to draw firm conclusions from these data about the nature of the link between parental mood disturbance and that of their children. In particular, we cannot allocate the effects due to genetic and environmental factors, but it is interesting to note that those girls who did not live with their parents after they were separated/divorced were significantly less likely to report mood disturbance than those who still lived with a separated parent.

In this study the key relatives do not seem to have been particularly sensitive to the self-reported

disturbed mood feelings of the girls. Two-thirds of the high scoring girls were rated as low-scoring by the key relatives, the great majority of whom were mothers. In addition, on the single but important item of suicidal ideation, the accuracy with which key relatives matched the girls' own reports was low (Monck & Graham, 1988), a finding also observed by Velez & Cohen (1988) in their study of suicidal behaviour and ideation in subjects aged 9–18 years. In the Isle of Wight studies it was noted that girls reported higher levels of depressive feelings than mothers reported for them (Rutter *et al*, 1976). Walker *et al* (1990) interviewed 175 mothers and children, as part of a study of the risk for psychiatric disorder in children by virtue of the absence or presence of major depression in their parents. They found that the majority of mothers whose children reported suicide attempts were unaware of them. A number of studies have confirmed that children and adolescents report more symptoms than their parents report about them (e.g. Orvaschel *et al*, 1981). Angold *et al* (1987) noted that agreement between parents and children about depressive symptoms in the children was significant but low, with boys' reports agreeing more highly with their parents' reports than girls' reports. Weissman *et al* (1987) also found that some mothers were either unaware of or underreported their children's psychiatric symptoms.

In adulthood, the prevalence of affective disorders has been found to be inversely related to socioeconomic status, in particular depressive symptoms reported in community surveys (Comstock & Helsing, 1976; Weissman & Myers, 1978). Some studies have found this to be true for adolescents also (Kandel & Davies, 1982). In the present study, no clear relationship with social class status emerged, either in relation to the full range of psychiatric disorders, or in relation to the narrower category of affective disorder. However, self-reported mood disturbance of the girls was related to the unemployment of the parent(s).

The association between the girls' reports of mood disturbance and more frequent attendance at general practice or hospital clinics was noted only for the girls who had left school. The small number of girls (of all ages) who had seen their GP more than ten times had significantly higher GOSQ scores. If we accept the relatively crude assumption that GP attendance is related to ill-health, we can find parallels in studies of adult patients (Weissman *et al*, 1981) and of adolescents (Kandel & Davies, 1982), in which depressive mood was found to be associated with subjects reporting physical ill health.

Overall, the girls were significantly more likely to report mood disturbance when they lived with their mothers who themselves reported depressive mood, with adult wage-earners who were out of work, and with parents with markedly disharmonious marriages or partnerships, or with mothers who were acting as a single parent. It is possible that the mother's mood disturbance or the poor marital relationship of parents will endanger interpersonal difficulties in the household. Data from this study cannot be used to disentangle the effects on the girls of sharing a personally disadvantageous environment with their key relative from the effects of observing or being involved in the poor relationship of their parents, or their mothers' depression, but these points are discussed further in the companion paper (Monck *et al*, this issue).

For some of these girls the mood disturbance they report in adolescence may be carried forward as part of their personality into adulthood. For some, the high mood disturbance scores may represent only the transitory stage in adolescence; for yet others the high score may be the first indication of longer-term or more serious psychiatric illness. A high degree of diagnostic continuity has been observed in an 18-year follow-up study of children aged 6–16 years originally attending a child psychiatric clinic (Harrington *et al*, 1990). In a more directly comparable study, Kandel & Davies (1986) followed up a group of adolescents in the community first seen in their early teens and subsequently visited nine years later. The area of adult functioning most strongly predicted by self-reported adolescent depressive affect was depressive affect reported in young adulthood. While there were no differences in the extent of or interaction with male or female friends, those reporting depressed mood in adolescence showed a tendency to have less intimate relationships with spouses/partners.

Kandel & Davies (1986) comment that the young men and women in their study had not passed through the total period of risk for developing psychiatric illness, and this aspect of continuity cannot therefore be properly appraised. The distinction between persistent and short-term symptoms is difficult to capture on self-report questionnaires, but may prove to be important in picking out those with a poor psychiatric prognosis. These points suggest the importance of further follow-up studies of adolescents to explore the continuities and discontinuities of mood disturbance into adult life.

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