

## ORIGINAL PAPER

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**Early onset depression: the relevance of anxiety**

Accepted: 8 May 1996

**Abstract** The aim of this study was to determine risk factors that may differentiate early onset from late onset depression. A non-clinical cohort that had been assessed from 1978 to 1993 at 5 yearly intervals and that had a high prevalence rate of lifetime depression took part in the study. We established an appropriate age cut-off to distinguish early onset (i.e. before 26 years) of major and of minor depression, and examined the relevance of a number of possible determinants of early onset depression assessed over the life of the study. Despite several dimensional measures of depression, self-esteem and personality being considered, they generally failed (when assessed early in the study) to discriminate subsequent early onset depression, with the exception of low masculinity scores being a weak predictor of major and/or minor depression. Early onset depression was strongly predicted, however, by a lifetime episode of a major anxiety disorder, with generalised anxiety being a somewhat stronger and more consistent predictor than panic disorder, agoraphobia and minor anxiety disorders (ie social phobia, simple phobia). The possibility that anxiety may act as a key predispositional factor to early onset depression and to a greater number of depressive episodes is important in that clinical assessment and treatment of any existing anxiety disorder may be a more efficient and useful strategy than focussing primarily on the depressive disorder.

**Introduction**

At our mood disorders unit (MDU), a tertiary referral in-patient and out-patient facility, age of onset of depression has appeared to have several important clinical implications. In essence, patients who describe an onset in childhood through to early adulthood appear to have a worse outcome, typified by more frequent and lengthier episodes. They often report significant social deprivation in their earlier years (e.g. lack of parental care) and impress as having a higher rate of psychiatric comorbidity - with anxiety and personality disorder overrepresented and with the latter being either of the cluster B (e.g. borderline) or cluster C (e.g. avoidant or dependent) type. This last observation is supported by Akiskal et al. (1980), in that they have included onset before the age of 25 years as one of their criteria for "characterological depression", while Rohde et al. (1991) have established that depression in older adolescents, compared to that in adults, is associated with a significant degree and a wide variety of comorbidity. As patients referred to our MDU tend to be at the severer and more treatment-resistant end of the depressive disorders spectrum, such findings require consideration in less specialised samples of depressed subjects.

In this paper we undertook, within a sample of convenience, a preliminary examination of the differences between those who have early onset versus adult onset depression, and considered possible determinants of any such phenomena. While there are few previous studies, early onset has been related to the early onset of major depression in the children of probands (Weissman et al. 1984), held to indicate more impairment in the longitudinal course of depression (Leckman et al. 1984), linked to a "more pernicious form" of depression, with persisting sub-syndromal symptoms and a number of "psychosocial scars" (Rohde et al. 1994), and viewed as indicating a greater likelihood of recurrence (Giles et al. 1989).

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## Materials and method

In 1978 we commenced a longitudinal study designed to identify risk factors for any sex difference in depression and the initial study design has been detailed (Wilhelm and Parker 1989). As we wished to identify determinants of any female preponderance, we sought a socially homogeneous young adult sample, where sex differences in depression would be unlikely at recruitment. We approached a group of university graduates who were all completing a 1-year teachers' training course and invited their participation, with 350 completing a screening questionnaire. Those accepting did not differ from those refusing by age, sex or by self-esteem scores (Wilhelm and Parker, 1989). The intake cohort consisted of 114 women and 56 men. At a 5-year review we reassessed 97% of the sample, at a 10-year review, 95%, and, in our most recent 1993 re-assessment, 15 years after recruitment, 92% of the initial cohort were reassessed (104 women and 52 men). At that last review, we undertook a semi-structured interview and administered the depression and anxiety section of the Composite International Diagnostic Interview (CIDI; Robins et al. 1988) to generate diagnoses of lifetime DSM-III-R depression, as well as anxiety (i.e. generalised anxiety disorder, panic disorder, agoraphobia, simple phobia and social phobia). In generating diagnoses of depression we imposed a minimum duration of 2 weeks and imposed RDC (Research Diagnostic Criteria) (Spitzer et al. 1978) impairment criteria, in addition to assessing the presence of each of the DSM-III-R diagnostic criteria. We then subdivided depressive episodes into "major depression" (if five or more of the nine criteria were acknowledged) and "minor depression" (if three or four were acknowledged), a subdivision used by Angst and Ernst (1993) in their longitudinal Swiss (Zurich) study. For each individual we calculated the number of such episodes and their total duration. As we have earlier demonstrated instability in remembering lifetime depressive episodes (Wilhelm and Parker 1994), we employed the "add on" strategy described in that paper. In essence, any subject who had achieved depression "caseness" criteria at an earlier assessment (in 1983 or 1988) remained a "case", and we then added as "cases" those who had their first depressive episode in the 1988–1993 interval.

A number of self-report measures were variably included at the four reviews, including state (Wilson 1979) and trait (Costello and Comrey 1967) depression measures, neuroticism as measured by the Eysenck Personality Inventory (Eysenck and Eysenck 1964), self-esteem (Rosenberg 1965), dependency (Blatt et al. 1975), perceived parental care and protection levels as assessed of the Parental Bonding Instrument DR PBI (Parker et al. 1979) and interpersonal sensitivity (not including "need for approval" sub-scale scores) (Boyce and Parker 1989). Additionally, we asked subjects to complete a sex role inventory (Bem 1974) designed to assess masculinity and femininity as two independent dimensions.

## Results

By the 1994 review, 35 (22%) subjects satisfied the criteria for a minor depressive episode (MIN) only, 54 for a major depressive episode (MAJ; with 33 of the latter having MAJ and MIN depression), giving a total of 89 "CASES" who met criteria for one or both disorders. The mean age for first episodes was 26.8 (SD 5.6) years for MIN and 28.9 (SD 6.6) years for MAJ, and 25.9 (SD 5.9) years for an initial onset of any depressive episode.

Establishing a cut-off age for early and adult onset depression

The frequency distribution of major depression and of all depressive disorders was examined against progress-

ively increasing ages of onset, the objective being to determine an appropriate cut-off age that, while weighted to younger age of onset, would allow sufficient numbers of separate young onset and older onset depressed subjects to be contrasted in the specific analyses. A cut-off age of 25 years or less was so identified as defining the "young onset" group. Thus, 41% of the MAJs and 55% of the CASES had had a depression onset by the age of 25 years. Lowering the cut-off age to 23 years would have resulted in only 17% of the MAJs and 38% of the CASES having an onset of depression by that age, while raising the cut-off to 28 years would have resulted in 59% of the MAJs and 74% of the CASES having an episode by that age.

Fifty-four (35%) of the whole sample met criteria for lifetime MAJ by 1993, representing 38% of the females and 29% of the males, and with a mean age of MAJ onset of 28.9 years. By 1993, 89 (57%) had had an episode of major or minor depression, representing 62% of the females and 46% of the males, and with a mean age of onset of 25.9 years. The CIDI categorised 7% of the total sample as having agoraphobia, 13% as having generalised anxiety disorder, 12% as having panic disorder, 18% as having social phobia and 16% as having a simple phobia by 1993. When we counted only episodes of anxiety independent of episodes of major or minor depression, the rates were 3% for agoraphobia, 6% for generalised anxiety disorder, 6% for panic, 10% for simple phobia and 13% for social phobia. The mean age of onset for the aggregated panic disorder/agoraphobia/generalised anxiety disorder groups (here regarded as the major anxiety disorders) were 23.9, 28.1 and 23.6, years, respectively, while for the latter two disorders (here called minor anxiety disorders), the mean ages of onset were 15.3 and 13.9 years, respectively.

### Considering separate depressive categories

As episodes of MAJ alone were rare ( $n = 21$ ), we did not study this group. We focussed on three categories - MIN alone, MAJ (alone or in conjunction with minor depression), and being a CASE (i.e. having one or both conditions).

### Minor (MIN) depressive episodes only

Table 1 data quantified the 9-year difference between the contrasting "early onset" and "adult onset" sub-groups, the significantly longer total duration of depression (and trend for more episodes) in the early onset group and the absence of any sex difference. Table 2 data compared the two sub-groups on a range of study variables viewed as possible risk factors for depression. Only two significant differences were demonstrated. First, there were higher state levels of

**Table 1** Comparison of depressive experience of early and adult onset subjects who had reached diagnostic criteria for (1) minor depression (2) major depression, and (3) major and/or minor depression

Depression type	Variables	Early onset	Adult onset	Comparison test
Minor depression ( <i>n</i> = 35) (MIN)	Mean age of onset of minor depression	22.3	31.0	$t = -7.44^{**}$
	Mean number of episodes	3.0	1.7	$t = 2.60^*$
	Mean total duration (weeks)	61.5	17.0	$t = 3.02^{**}$
	Sex ratio (F%:M%)	76:72	24:28	$X^2 = 0.08$
Major depression ( <i>n</i> = 54) (MAJ)	Mean age of onset of any depression	22.9	33.0	$t = -8.54^{**}$
	Mean number of episodes	2.6	1.6	$t = 2.41^*$
	Mean total duration (weeks)	66.6	44.9	$t = 1.33$
	Sex ratio (F%:M%)	41:40	59:60	$X = 0.004$
Major and/or minor depression ( <i>n</i> = 89) (CASE)	Mean age of onset of any depression	21.6	31.3	$t = -12.62^{**}$
	Mean number of episodes	3.8	2.0	$t = 4.20^{**}$
	Mean total duration (weeks)	95.6	51.1	$t = 2.48^*$
	Sex ratio (F%:M%)	55:45	54:46	$X^2 = 0.01$

\*  $P < 0.05$ ; \*\*  $P < 0.01$

depression at the most recent assessment in the early onset group, but, as such a difference was not evident at the commencement of the study (in 1978), this would appear to be a consequence of early onset depression rather than an antecedent difference. Second, those with early onset MIN depression had significantly higher levels of neuroticism at the 1993 assessment; while not significant for the 1978 data, there was a clear trend for higher neuroticism at study entry. Examination of the prevalence of CIDI-identified anxiety disorders (Table 3) established clear trends for all anxiety disorders examined to be distinctly over-represented in the early onset depressive sub-group, although formally significant only for generalised anxiety, simple phobia and aggregated categories of major and minor anxiety disorders.

#### Major depression (MAJ), alone or in conjunction with minor depression

Table 1 data failed to demonstrate any sex difference in the early onset and adult onset groups, quantified a 10-year difference in age of onset and established a greater number of episodes (as well as a trend for being depressed for a longer total period) for the early onset MAJ group. Table 2 data failed to demonstrate any significant differences in personality and dimensional measures of depression, for earlier parenting experiences and for sex role inventory scores for the two groups. Table 3 data demonstrated a significantly increased risk of a major anxiety disorder in the early onset depression group, significant for generalised anxiety disorder, but there was also a trend for panic disorder and agoraphobia.

#### Major and/or minor depression (CASE)

As for the two previous sets of contrast analyses, the data in Table 1 failed to show any sex difference in the early and adult onset groups, in addition to quantifying a significantly earlier age of onset, as well as more episodes and a longer total period of depression in the early onset sub-group. Table 2 data established higher trait levels of depression as assessed in 1993 for the early onset group, building on a non-significant difference showing the same trend at study entry. Other differences were for the early onset sub-group to rate as more dependent at the 1988 assessment and to rate as less masculine on the sex role inventory in 1983 - but no longer in 1993. Table 3 data established significantly higher rates of both major and minor anxiety, and for the separate CIDI-defined disorders, of generalized anxiety, panic disorder and simple phobia.

#### Correlational analyses

As our largely negative findings for the risk factors studied in Table 2 might have reflected inappropriate selection of a categorical age cut-off, we undertook dimensional analyses for the 89 subjects who met CASE criteria, with scores on all dimensional measures listed in Table 2 being correlated against age of onset of depression. A younger age of onset was linked with higher levels of 1978-assessed maternal protection scores, and with several measures administered later [i.e. 1993-assessed trait depression ( $r = 0.28$ ,  $P < 0.01$ ), 1988-assessed dependency ( $r = 0.27$ ,  $P < 0.01$ ), higher levels of 1988-assessed maternal protection ( $r = 0.29$ ,

**Table 2** Comparison of those who developed early onset and adult onset depression, in relation to those who had reached diagnostic criteria for (1) minor depression, (2) major depression, and (3) major and/or minor depression, on risk measures administered initially and most recently

Variable	Assessed	Minor depression (MIN)			Major depression (MAJ)			Major and/or minor depression (CASE)		
		Early onset ( $\leq 25$ years) ( $n = 17$ )	Adult onset ( $\geq 26$ years) ( $n = 18$ )	<i>t</i> test	Early onset ( $\leq 25$ years) ( $n = 22$ )	Adult onset ( $\geq 26$ years) ( $n = 32$ )	<i>t</i> test	Early onset ( $\leq 25$ years) ( $n = 40$ )	Adult onset ( $\geq 26$ years) ( $n = 49$ )	<i>t</i> test
Trait depression	1978	36.6	29.1	1.83	35.9	32.6	0.98	34.8	31.8	1.13
	1993	35.4	28.3	1.79	37.5	34.4	0.83	37.3	30.1	2.67**
State depression	1978	59.2	58.0	0.53	58.0	58.2	0.08	57.7	59.1	0.95
	1988	58.5	51.4	3.00**	55.5	60.6	1.97	58.1	55.8	1.19
Neuroticism	1978	10.2	8.0	1.33	11.0	10.2	0.63	10.4	9.4	0.91
	1993	11.0	6.8	2.22*	10.0	11.2	0.90	10.7	9.1	1.35
Dependency	1978	55.1	52.7	0.76	55.0	53.4	0.58	54.4	53.4	0.44
	1988	58.4	52.9	1.74	57.2	52.7	1.96	57.3	52.0	2.94**
Self-esteem	1978	1.8	1.0	1.75	1.9	1.9	0.17	1.8	1.6	0.69
	1993	1.3	0.5	1.84	1.2	1.7	1.05	1.4	1.0	0.89
Interpersonal sensitivity	1988	70.4	63.4	1.88	69.8	66.5	1.03	70.1	64.2	2.51*
	1993	65.9	60.5	1.46	67.5	67.4	0.05	68.1	62.8	2.06*
Bem femininity	1983	94.9	96.9	-0.65	98.2	93.9	1.71	96.4	95.0	0.74
	1993	96.2	97.0	-0.29	97.7	94.9	0.93	96.1	96.4	0.12
Bem masculinity	1983	89.8	92.4	-0.70	91.4	95.4	1.08	90.2	96.1	2.14*
	1993	92.6	94.3	-0.35	96.6	94.2	0.61	94.1	95.0	0.29
Maternal care	1978	25.5	24.6	0.35	24.7	25.0	0.15	25.2	24.6	0.34
	1983	25.2	23.0	0.79	25.1	23.7	0.54	24.5	23.8	0.34
Maternal protection	1978	14.5	14.5	0.01	18.3	15.9	1.09	16.4	15.3	0.66
	1988	17.4	15.3	0.67	17.5	13.9	1.48	16.8	14.5	1.21
Paternal care	1978	21.2	19.8	0.40	20.5	19.6	0.35	20.5	19.8	0.32
	1988	20.2	18.7	0.48	21.2	18.2	1.16	20.2	18.5	0.86
Paternal protection	1978	12.2	12.7	-0.22	14.5	14.0	0.20	13.2	13.9	0.39
	1988	15.2	11.4	1.49	10.8	12.7	0.76	12.3	12.6	0.15

\*  $P < 0.05$ ; \*\*  $P < 0.01$

**Table 3** Prevalence of lifetime anxiety disorders for those subjects with early onset and adult onset (1) minor depression, (2) major depression, and (3) combined major and/or minor depression (GAD = generalised anxiety disorder)

Anxiety disorder	Minor depression (MIN)			Major depression (MAJ)			Major and/or minor depression (CASE)		
	Early onset ( $\leq 25$ years) ( $n = 17$ )	Adult onset ( $\geq 26$ years) ( $n = 18$ )	$X^2$	Early onset ( $\leq 25$ years) ( $n = 22$ )	Adult onset ( $\geq 26$ years) ( $n = 32$ )	$t$ test	Early onset ( $\leq 25$ years) ( $n = 40$ )	Adult onset ( $\geq 26$ years) ( $n = 49$ )	$X^2$
Major anxiety disorder	41%	11%	4.13*	64%	31%	5.53**	53%	17%	11.93***
GAD	35%	6%	4.83*	45%	16%	5.78**	39%	7%	11.57***
Panic disorder	24%	6%	2.30	41%	25%	1.52	33%	15%	3.68*
Agoraphobia	12%	6%	0.43	27%	12%	1.88	20%	7%	2.96
Minor anxiety disorder	47%	6%	7.88**	40%	44%	0.04	49%	20%	8.03***
Social phobia	29%	6%	3.50	14%	31%	2.21	26%	15%	1.74
Simple phobia	35%	6%	4.83**	32%	22%	0.67	33%	12%	4.96*

\*  $P < 0.05$ ; \*\*  $P < 0.025$ ; \*\*\*  $P < 0.01$

$P < 0.005$ ) and higher levels of 1993-assessed interpersonal sensitivity ( $r = 0.28$ ,  $P < 0.01$ ).

Such analyses suggest a scarring phenomenon (with younger age of onset of depression variably contributing to higher levels of trait depression and dependency) and also a younger onset perhaps eliciting higher maternal protection levels (as links with PBI-measured maternal protection were not significant when 1978 baseline scores were analysed). Most importantly, the lack of any association between age of onset and the entry dimensional variables assessing personality and depression supports comparable categorical analyses, and argues against a false-negative conclusion driven by any inappropriate selection of our age cut-off.

## Discussion

As noted earlier, we undertook this study in a sample of convenience rather than in a general community sample. As described in previous publications (Wilhelm and Parker 1989, 1994) the sample had several distinct characteristics. As cohort members were recruited in their final year of a university-based teacher training course, most have subsequently been employed as teachers and they form a reasonably distinct middle-class group. As, by design, they were not a representative community group, any study findings (be they epidemiological estimates or aetiological formulations) risk being unique to the sample. In comparison to community-based studies, our cohort members clearly reported a higher rate of several lifetime anxiety disorders and of lifetime depression. Thus, the recent National Comorbidity Study (Kessler et al. 1994) has reported the following lifetime rates (with our rates in brackets): panic disorder, 3% (12%); generalised anxiety disorder, 5% (13%); social phobia, 16% (18%); simple phobia, 11% (14%); major depression, 17%

(35%). The degree to which varying methodological approaches and how comorbidity issues may influence estimated rates remain problematic. Clearly, our key finding, implicating the relevance of anxiety as disposing to early onset depression, must be tested in other samples, and ideally in randomly selected community surveys.

Our longitudinal study design had the distinct advantage of allowing us to assess the relevance of a number of variables prior to onset of depression in the great majority of subjects, and so redress the confounding effects of depressive disorders "scarring" the risk variable scores, which might lead to their invalid identification as antecedent risk factors. Our imposed cut-off of 25 years or younger for early onset depression was dictated by a need to ensure reasonable distributions of subjects across comparison groups. Eaton et al. (1995) have analysed ECA (Epidemiologic Catchment Area) data and have calculated that 20% of those meeting criteria for major depression have episode onset before the age of 25 years. Others have imposed younger cut-off ages for early onset depression, including 20 years or younger (McGlasman 1989) or younger than 20 years (Giles et al. 1989). Future studies might well benefit, however, by imposing (subject to adequate numbers) younger age cut-offs than that used in our study (e.g.  $< 21$  years,  $< 16$  years) to examine the characteristics of early onset depression. As our correlational analyses (with age assessed dimensionally) were, however, in broad agreement with the imposed categories, we suggest that our imposed cut-off was unlikely to have created any substantive distortions. Finally, we established mean ages of 26.8 and 28.9 for initial onset of MAJ and MIN depression, respectively, somewhat in excess of our cut-off.

Against expectation, we found no evidence that baseline state and trait depression levels or self-esteem scores discriminated early onset from adult onset depression, whether MAJ, MIN or CASE status was being assessed. Two personality measures administered

at baseline (i.e. neuroticism and dependency) also failed to discriminate in the categorical analyses, although the early onset cases did score higher on dependency assessed in 1988, which we interpreted as a likely “scarring” phenomenon of having experienced depression over a longer period rather than being an antecedent risk factor. Scoring lower on masculinity (as assessed by a sex role inventory) was a baseline predictor of being an early onset CASE, but may have been a chance finding as such differentiation was not replicated on that measure in the 1993 administration. The relevance of interpersonal sensitivity remains unclear as it was assessed only in 1988 and 1993, and not at baseline, with higher scores being returned by the early onset CASE subjects (and so trending for those with early onset MIN depression) on both occasions - so that it may be a risk factor for early onset depression. Future studies would need to clarify the relevance of other personality dimensions and also examine the relevance of formal Axis II personality disorder categories; Black et al. (1988) have reported a significantly higher rate of major depression occurring before the age of 20 years in those with a formal DSM-III diagnosis of personality disorder (i.e. 51% vs 29%).

The PBI measure has been shown to be a reliable and valid self-report measure of key parental dimensions (care and protection), and both low care and high protection scores have been linked to non-melancholic depression in numerous studies (Parker 1992). Against our clinically driven expectation, we found no clear evidence that early onset depression was contributed to by anomalous parenting, with only a link between early onset CASE status and maternal overprotection being demonstrated in a correlational analyses. Replication studies might benefit from examining whether any such overprotection is likely to be an antecedent risk factor or a consequence, as well as considering other relevant social deprivation variables (e.g. social class, income, years of schooling) to clarify the salience of this domain. Again at variance with our clinical impression, we found no evidence to support an over-representation of females in the early onset group.

While we demonstrated more episodes and a longer total duration of depression for the early onset groups, such differences might merely reflect the reality that, on average, the early onset groups had had their first episode some 10 years earlier. Thus, further studies might benefit from studying both duration of initial and subsequent episodes, the extent to which age of onset is associated with complete as against partial remission, frequency of recurrence and other more specific courses of illness variables. As early onset depression in probands has been demonstrated as increasing the morbidity risk of depression in relatives (Bland et al. 1986), there are both transmission mechanism and classificatory implications to such research. In relation to the first, Weissman et al. (1987) have established, in a group of young people aged 6–23 years, an earlier age

of onset of depression in those whose parents had been depressed. Thus, pre-adult onset of major depression appears to have a high familial loading, and has raised the possibility that it may be “the result of a single homogeneous disorder” (Weissman et al. 1984).

In relation to the second point, we note our key finding of anxiety disorders being distinctly over-represented in the early onset group. In essence, all of our classified major anxiety disorders (i.e. generalised anxiety disorder, panic disorder, agoraphobia) were over-represented in early onset MIN, MAJ and CASE sub-groups, although significance was achieved only for generalised anxiety disorder across all three groups. While our “minor anxiety” disorders (i.e. social phobia, simple phobia) also tended to be over-represented in early onset depression, this was most distinctive in relation to minor depression and so contributed to the significant differences established for the early onset CASE sub-group. As anxiety and depression can occur concurrently or independently increase the chance of the other, it was important to establish whether we had merely identified an issue of comorbidity or whether the anxiety disorders preceded and therefore might act as a risk factor for early onset depression. The latter possibility is supported by the Zurich study (Ernst et al. 1992), where higher levels of anxiety emerged 5–7 years prior to the onset of first onset depression in early adulthood. After excluding those subjects who reported simultaneous initial onset of major anxiety and depression and those who had no major anxiety disorder, 7 out of 22 (32%) of the early onset MAJ and 5 out of 32 (16%) of the adult onset MAJ subjects reported major anxiety disorder preceding their major depressive episode. In comparable analyses examining those who met CASE criteria (i.e. major and/or minor depression), 7 out of 49 (14%) of the early onset and 1 out of 40 (2%) of the adult onset subjects reported a major anxiety disorder preceding their initial depressive episode. Such data suggest consistent trends for early onset depressive disorders to be somewhat more likely than adult onset depression to be preceded by a major anxiety disorder. In a study of depressed adolescents, Rohde et al. (1991) have established that anxiety is 6 times more likely to precede depression than the converse. While examination of any temporal sequencing (i.e. that onset of anxiety should precede onset of depression) would appear important if any argument is to be put forward that anxiety is a predisposing risk factor for depression, temporal precision should not be regarded as a mandatory condition. Thus, the formal cut-off criteria for specifying DSM-III-R anxiety and depressive disorders may, in and of themselves, influence sequencing. In addition, Eaton et al. (1995) have calculated a prodromal period of 10–15 years for ECA subjects meeting lifetime criteria for panic disorder, suggesting that “onset” is not necessarily as clear-cut as might be imagined, so confounding attempts to specify whether anxiety precedes depression or the converse.

Those authors have quantified that, for those with a panic attack, the relative risk for an episode of major depression is 3.4. Our findings extended such data to suggest greater specificity for those with early onset depression.

Thus, if "anxiety" is a key risk factor for early onset "depression", it may not be mandatory to establish that formal criteria for anxiety disorders are achieved of necessity. Junker and Pilkonis (1993) have, in another context, articulated a number of relevant models with three being of likely relevance here. Thus, we should consider (1) a spectrum model (i.e. anxiety and depression are related but differ in their overt manifestations), (2) a predispositional model (i.e. anxiety precedes and increases the risk of depression) and (3) a complication model (i.e. depression develops as a consequence of a major anxiety disorder or of high trait anxiety being present). It might then be useful, in any replication study, to assess the relevance of trait anxiety levels as a risk factor for subsequent depression rather than using formalised anxiety categories.

In addition, it may be useful to approach such issues by examining what has been conceptualised as "double depression" (i.e. major depression superimposed on chronic minor depression). Levitt et al. (1991) have compared those with major depression alone and those with double depression, and have established an earlier age of onset and a higher prevalence of "any anxiety disorder" in the latter. Similarly, abstracting data from a study contrasting depressed adolescents and depressed adults (Lewinsohn et al. 1991), the probability of having a lifetime diagnosis of anxiety in those with major depression superimposed on dysthymia was 35% in the adolescent, and 9% in the adult sample.

We conclude that our most important finding was the putative relevance of anxiety to early onset depression, and suggest that that finding has both potential clinical and research utility. Patients commonly present seeking assistance for clinically confirmed depression, but rate positive for significant lifetime and/or concurrent anxiety. The clinician can elect to focus treatment initially on the depression or, instead, address the anxiety disorder. Impressionistically, the latter approach is often fruitful. As the anxiety level is reduced, the "secondary" depression often responds without need for any specific antidepressant intervention. Research attention would benefit from study designs seeking to model the inter-relationship between anxiety and depression in early onset depression, and to specify the relevance of anxiety to onset, relapse, recurrence and other components in the course of a depressive illness.

**Acknowledgements** We thank sample members for their on-going willingness to contribute, Dusan Hadzi-Pavlovic for statistical advice, and Sandra Evans and Yvonne Foy for manuscript preparation. This study is supported by NHMRC Program Grant No. 953208.

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