

The development of a refined measure of dysfunctional parenting and assessment of its relevance in patients with affective disorders

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ABSTRACT

Background. The Parental Bonding Instrument (PBI) measures fundamental parenting dimensions (care and over-protection), but does not directly assess abusive parenting.

Methods. We describe the development of the Measure of Parenting Style (the MOPS), comprising refined PBI scales assessing parental indifference and over-control, as well as a scale assessing parental abuse.

Results. We examine psychometric properties of the MOPS, while several analyses build to the concurrent validity of the abuse scale as an experiential measure. We examine the extent to which both the PBI and the MOPS scales showed specificity of dysfunctional parenting to the non-melancholic depressive subtype, and across a range of anxiety disorders. Non-melancholic depressed patients returned anomalous parenting scale scores (compared to melancholic subjects), but only when such subtyping decisions were clinician-generated. Those receiving DSM-III-R lifetime anxiety diagnoses of panic disorder and of social phobia returned higher PBI protection and MOPS over-control scores than non-anxious subjects, while differences were not established for those with generalized anxiety disorder or obsessive compulsive disorder.

Conclusions. We consider the likely utility of the MOPS scale and note the module capacity of separate MOPS and PBI scales, which allow a set of options for assessing perceived parenting characteristics.

INTRODUCTION

A theory that has long underpinned aetiological and clinical formulations is that certain parental behaviours and attitudes dispose the child to both psychiatric disorder as well as to dysfunctional social and emotional interactions in adulthood. Any research addressing such propositions must first define the salient at-risk parental characteristics and, secondly, seek to measure those characteristics validly.

There is a strong theoretical argument for studying fundamental parental characteristics

(and their anomalous expression). Hinde (1974) has argued for two dimensions (of 'care' and 'protection') underlying all significant interpersonal relationships. Again, theoreticians such as Bowlby (1977) have defined anomalous parenting in corresponding terms, in essence failure to provide care (i.e. by being unresponsive, disparaging, rejecting) or excessive over-protection or control. The Parental Bonding Instrument or PBI was therefore designed (Parker *et al.* 1979) as a refined measure of care and over-protection, with respondents completing the 25-item self-report questionnaire as they remember each parent in their first 16 years. Acceptable test-retest reliability has been demonstrated over brief and prolonged intervals,

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while a number of studies have supported its validity to both measure perceived and actual parenting (Parker, 1983*a*; Parker & Gladstone, 1996).

A large number of PBI-based studies have suggested the relevance of low parental care and, separately or in conjunction, of parental over-protection to certain psychiatric conditions, thus rejecting an association between PBI scores and psychiatric status *per se*, and arguing for some specificity of anomalous parenting. A recent overview (Parker & Gladstone, 1996) illustrates that point with, for instance, anomalous parenting being over-represented in those with non-melancholic but not melancholic depression. Those with generalized anxiety disorder are somewhat more likely to have been recipients of 'affectionless control' (i.e. low care, high protection), while 'affectionate constraint' (i.e. high care, high protection) appears to have some specificity to panic disorder. Such differences across the anxiety disorders may have aetiological implications, in that we have speculated (Parker & Gladstone, 1996) that 'affectionless control' may be an antecedent risk factor to generalized anxiety, while 'affectionate constraint' may more be a parental style elicited by children with forerunners of panic disorder such as behavioural inhibition.

Recently, Harris & Brown (1996) made an important observation about the PBI – that it fails to cover physical and sexual abuse, which they held to be another feature of childhood experience that is being increasingly demonstrated as a 'predictor of adult depression'. In response, we note that there were two consecutive stages to the PBI's development and application. First, to ensure that it captured fundamental parental dimensions reliably and validly. Secondly, to examine its specificity after a significant number of applied studies had been undertaken, and so proceed logically to focus on mechanisms (be they environmental or genetic) that determine links between PBI scores and identified psychiatric disorders. Again, we have viewed the PBI as a screening measure, readily complemented by other measures assessing the salience of other developmental influences.

Nevertheless, the Harris & Brown observation warrants consideration as to whether a measure such as the PBI can be broadened or com-

plemented by items that capture abusive parental characteristics. In addressing that task, we argue against any fine focus on specific abusive behaviours such as 'incest', both because of their infrequency and the difficulties in defining their nuances, and so prefer to attempt to capture the constructs that subsume abusive behaviours. In addition, we seek to introduce a conceptual focus that might assist aetiological studies using the developed measure. Finlay-Jones & Brown (1981) identified differential life event specificity to anxiety and depressive disorders in adults – with insecurity, threat or danger experiences being more likely to precede anxiety, while loss experiences were more likely to precede depression. Subsequently, Brown & Harris (1993) examined whether parental indifference and abuse have specificity to later anxiety or depression. In that study, both parental indifference and abuse (sexual or physical) raised the chance of both depression and anxiety (apart from mild agoraphobia and simple phobia) in adult life. They also reviewed a number of studies implicating a greater likelihood of parental separation or of a 'grossly disturbed childhood' for those who developed panic disorder but not for those who developed generalized anxiety disorder. For such reasons, we sought to include items capturing parental separation and loss, as well as 'dangerous and threatening' parenting, to allow for any specificity between differential parenting to anxiety and depressive disorders to be identified. In this paper we both report the development of the measure and examine for any specificity to separate depressive and anxiety disorders.

METHOD

A 21-item questionnaire was developed, with items capturing: (i) refined PBI-defined dimensions of care and protection; (ii) parental interactions inducing insecurity, guilt and failure; and (iii) parental abuse and separation experiences, with the aim being to capture the principal domains and dimensions of parenting that have been proposed as putting the child at later risk of psychopathology (Bowlby, 1969). In developing the PBI, scale items were variably expressed 'positively' or 'negatively'; to allow invalid responders to be detected by their consistent checking of a particular column. A

disadvantage of that strategy was that the 'negatively' expressed items could confuse some respondents. Gamsa (1987), therefore, reconstructed the five negative PBI items as positive statements and demonstrated clearer understanding by respondents. Such experience argued for expressing all items in a consistent direction, be it 'positive' or 'negative'. We selected the latter, favouring direct assessment of dysfunctional parenting components. The measure was administered to a sample of 152 depressed patients assessed at our tertiary Mood Disorders Unit (MDU), who initially completed a range of questionnaires including the standard PBI scale for each parent. The questionnaire instructed subjects to rate 'how true' they judged each of the 21 items as a description of their mother's and (separately) their father's behaviours toward them in their first 16 years, with rating options being 'extremely true', 'moderately true', 'slightly true' and 'not true at all', generating scores of 3, 2, 1 and 0 respectively. As we will examine for specificity of dysfunctional parenting to varying subclasses of depressive and anxiety conditions, we note our subtyping measures.

Depression

Consultant psychiatrists (who subsequently interviewed sample members) generated diagnoses according to three diagnostic systems: DSM-IV (APA, 1994) criteria for depressive disorders; the Newcastle Index (Carney *et al.* 1965) for distinguishing 'endogenous' and 'neurotic' depression (employing a cut-off score of 6 or more for allocation to the first category); and our own MDU 'clinical diagnoses' of psychotic, endogenous, neurotic and reactive depression, as detailed in a previous publication (Parker *et al.* 1994). The 21-item Hamilton (Hamilton, 1967) depression measure was completed by the psychiatrist.

Anxiety

A research assistant administered the CIDI-A, Version 1.2 (World Health Organization, 1993), generating DSM-III-R (APA, 1987) lifetime diagnoses (and sample prevalences) of generalized anxiety disorder (13%), panic disorder with or without agoraphobia (28%), agoraphobia alone (5%), social phobia (32%) and obsessive compulsive disorder (12%), with

54% meeting criteria for one or more of those disorders and the residual 46% forming a non-anxious control group for comparative analyses. The rarity of agoraphobia alone resulted in its exclusion from analyses of separate anxiety disorders.

Other variables

Research psychiatrists undertook a lengthy interview assessing a range of issues including developmental stressors, and numerous questionnaires were completed. As part of the semi-structured interview, patients were questioned about exposure to a number of abusive attitudes and behaviours (e.g. 'physical violence') from one or both of their parents, with the three-point anchor points (i.e. no, possible, definite) allowing some validation opportunities for the developed measure – although, regrettably, our rating strategy of assessing any such exposure from one or both parents prevented us from examining separate maternal and paternal contributions. Sexual abuse prior to the age of 16 was assessed both in relation to either (i) a parent, or (ii) 'another' being the perpetrator.

RESULTS

Of the 152 subjects, 99 (65%) were female. They had a mean age of 40.7 (s.d. 11.9, range = 17–72) years, and a mean social class of 4.4 (s.d. = 1.48), as measured by the seven-point Congalton (1969) social class measure. The mean Hamilton depression score was 22.3 (s.d. 7.2). Fifty-eight (38%) met DSM-IV criteria for melancholia, 38 (25%) were assigned above the Newcastle cut-off score to an 'endogenous depression' group, and our MDU clinical diagnoses assigned 9% as having psychotic, 26% endogenous, 35% neurotic and 30% reactive depression. As previously (e.g. Parker & Hadzi-Pavlovic, 1996), we aggregate the first two as a putative 'melancholia' group, so assigning 35% of our current sample. Thus, we have three varying estimates of 'melancholia' (ranging from 25% to 38% of the sample) when examining for differential parental experience across depressive subtypes.

A principal components analysis (PCA) was undertaken of questionnaire items, which identified three factors with an eigenvalue exceeding 1.0 in each of the separate maternal and paternal

Table 1. *Factor loadings from the pattern matrix solution on separate principal component analyses for separate maternal and paternal forms of the MOPS*

	Factor					
	I ('Indifference')		II ('Over-control')		III ('Abuse')	
	Mother	Father	Mother	Father	Mother	Father
Overprotective of me			0.84	0.80		
Verbally abusive of me					0.73	0.41
Over-controlling of me			0.80	0.75		
Sought to make me feel guilty			0.46	0.58		
Ignored me	0.85	0.94				
Critical of me			0.42	0.45		
Unpredictable towards me					0.46	0.48
Uncaring of me	0.83	0.90				
Physically violent or abusive of me					0.94	0.67
Rejecting of me	0.66	0.83				
Left me on my own a lot	0.78	0.77				
Would forget about me	0.98	0.78				
Was uninterested in me	0.99	0.90				
Made me feel in danger					0.36	1.0
Made me feel unsafe					0.39	1.0

forms. The first three factors accounted for nearly three-quarters of the variance in both analyses (i.e. 73.1% for fathers; 73.2% for mothers). A three-factor solution was therefore imposed, an oblique rotation undertaken and factor loadings on the pattern matrix inspected. Six items were then deleted for failing to demonstrate significant differentiation across the three factors (i.e. 'Made me feel insecure'; 'Made me feel a failure'; 'Did not protect me against threats by others'; 'Was disapproving of me'; 'Failed to provide a secure emotional environment for me'; and 'Became separated from me – by divorce, separation or other reasons').

The PCA procedure was repeated with those items deleted. The first three factors of our MOPS ('Measure of Parenting Style') measure then accounted for 75.9% of the variance for fathers and 77.6% for mothers. Factor loadings suggested the following labels for the three dimensions – parental 'indifference', 'over-control' and 'abuse'. Table 1 reports the factor loadings, which were broadly comparable for mothers and for fathers, apart from three items assessing: (i) physical violence or abuse (higher for mothers); (ii) making the child feel in danger; and (iii) making the child feel unsafe (the latter two being higher for fathers).

Scale scores were derived by adding raw scores on the contributing items to each factor. Alpha coefficients were 0.93 (for both maternal

and paternal indifference), 0.82 and 0.76 for maternal and paternal over-control, and 0.87 and 0.92 for maternal and paternal abuse respectively, suggesting acceptable internal consistency of the derived scales. While the PBI scores in this sample showed relatively normal distributions, MOPS scores were skewed with, for instance, 42% of the subjects returning a zero score for maternal indifference and 54% a zero score for maternal abuse. Intercorrelating maternal and paternal MOPS scales revealed correlation coefficients of 0.56 for the indifference, 0.25 for the over-control and 0.39 for the abuse scales (all P 's < 0.01).

Table 2 examines for links between scales on the separate MOPS and PBI measures. For the whole sample, the six-item MOPS indifference scale correlated well with the 12-item PBI care scale (correlations of -0.76 and -0.79 respectively for maternal and paternal forms), as did the four-item MOPS over-control scale when inter-correlated with the PBI protection scale (0.73 and 0.71 for maternal and paternal forms), while the newly derived five-item MOPS abuse scale was modestly correlated with low PBI care (0.65 and 0.58) and with higher PBI protection (0.39 and 0.44) scores. As noted, many subjects returned zero scores on the measures, risking misleading interpretation of the correlation coefficients. We therefore repeated the analyses with paired deletion of subjects scoring zero on either of the relevant PBI or MOPS measures.

Table 2. *Intercorrelation of relevant maternal and paternal forms of the PBI and MOPS measures, for the whole sample (and with paired analyses deleting subjects who returned a zero score on the MOPS measure), with maternal scores above the diagonal and paternal scores below*

	PBI		MOPS		
	Care	Protection	Indifference	Over-control	Abuse
PBI					
Care		-0.44** (-0.44**)	-0.76** (-0.71)	-0.61** (-0.55**)	-0.65** (-0.42**)
Protection	-0.48** (-0.48**)		+0.36** (+0.30*)	+0.73** (+0.66**)	+0.39** (+0.24*)
MOPS					
Indifference	-0.79** (-0.74**)	+0.34** (+0.32*)		+0.58** (+0.49**)	+0.72** (+0.47**)
Over-control	-0.54** (-0.50**)	+0.71** (+0.69**)	+0.50** (+0.41**)		+0.62** (+0.34*)
Abuse	-0.58** (-0.44**)	+0.44** (+0.31*)	+0.72** (+0.56**)	+0.61** (+0.46**)	

* $P < 0.05$; ** $P < 0.001$.

Table 3. *Socio-demographic influences on the MOPS and PBI measure*

	Total	(s.d.)	Male	(s.d.)	Female	(s.d.)	<i>t</i> test	Age <i>r</i>	Social class <i>r</i>
MOPS									
Maternal indifference	3.3	(4.7)	2.3	(3.3)	3.9	(5.2)	2.05*	+0.02	-0.07
Maternal over-control	4.4	(3.6)	3.6	(3.0)	4.8	(3.8)	2.09*	-0.03	-0.10
Maternal abuse	2.2	(3.4)	1.3	(2.2)	2.7	(3.9)	2.43*	+0.00	-0.13
Paternal indifference	5.2	(5.6)	6.2	(5.6)	4.7	(5.5)	1.55	-0.02	+0.04
Paternal over-control	3.8	(3.3)	3.9	(3.2)	3.7	(3.4)	0.38	-0.05	+0.05
Paternal abuse	3.4	(4.7)	3.9	(5.1)	3.1	(4.6)	1.05	+0.01	+0.11
PBI									
Maternal care	22.5	(9.7)	26.2	(7.7)	20.5	(10.2)	3.52**	-0.08	+0.11
Maternal protection	15.9	(9.0)	13.6	(7.8)	17.1	(9.4)	2.29*	+0.09	-0.05
Paternal care	18.9	(10.2)	17.6	(9.9)	19.6	(10.3)	1.13	+0.04	-0.08
Paternal protection	13.8	(8.7)	11.8	(8.3)	14.8	(8.8)	2.05*	+0.03	+0.10

* $P < 0.05$; ** $P < 0.01$.

Table 2 data suggest trivial to slight reductions in coefficients examining related scale dimensions (i.e. care/indifference, and over-control/protection) but more distinct reductions in coefficients involving the MOPS abuse scales. The Table 2 data allow two conclusions. First, 10 of the relevant MOPS scale items (6 indifference and 4 over-control items) appeared to provide reasonable estimates of PBI-measured parental care and protection. Secondly, the MOPS abuse scale was sufficiently independent of both PBI scales to suggest that it might provide additional information in applied studies.

Table 3 examines for sociodemographic influences on PBI and MOPS scores. Females returned higher PBI protection scores for both parents and lower maternal care scores. Female subjects returned higher maternal scores on all MOPS scales, while there were no sex differences

for paternal MOPS scores. The one possible disjunction between the measures was significantly higher paternal PBI protection reported by females but no sex difference on the equivalent MOPS over-control scale. No age or social class effects were demonstrated with PBI and MOPS scores, the last particularly important in suggesting that the MOPS abuse scores were not weighted to low social class.

Table 4 examines a number of potentially threatening parental behaviours assessed categorically (exposed *v.* not exposed) during the semi-structured interview. As we seek, in particular, to validate the MOPS scale, Table 4 considers only potentially abusive parental behaviours. As noted earlier, the patients had been asked whether they had been exposed to such behaviours from one or both of their parents so that we are unable to derive MOPS scores for the actually abusive parent if, in certain situ-

Table 4. MOPS abuse scale scores for patients reporting variable exposure at clinical interview to a range of likely abusive situations – from one or both parents

Behaviour		Patient's response to clinical interview			F ratio
		No	Possible	Definite	
Parental physical violence to patient	Mother	1.4	3.8	4.6	13.1**
	Father	1.8	5.2	8.9	42.0**
	N	112	11	29	
Parental verbal violence/abuse to patient	Mother	0.8	2.5	4.7	29.7**
	Father	1.1	3.1	7.4	46.3**
	N	90	11	51	
Parental physical violence to the other parent	Mother	1.8	2.0	4.6	7.1*
	Father	2.3	4.7	8.0	18.2**
	N	121	7	23	
Parent verbally violent to the other parent	Mother	1.3	3.1	4.1	11.6**
	Father	1.5	5.2	6.9	27.3**
	N	97	12	42	
Parental sexual abuse to the patient	Mother	1.8	4.0	9.9	24.8**
	Father	2.8	9.2	10.6	14.1**
	N	141	4	7	
Sexual abuse of the patient by another	Mother	1.9	4.8	4.7	5.9**
	Father	2.9	4.8	7.3	6.3**
	N	133	4	15	

** $P < 0.01$; *** $P < 0.001$.

ations, one parent was abusive and the other non-abusive. Table 4 data demonstrate that there were reasonably high exposure rates to a range of abusive experiences (e.g. physical violence), but a low rate of acknowledged sexual abuse (with only 7% reporting such exposure as possible or definite) from a parent and 12% from a non-parent. The tabulated data demonstrate strongly significant links between abusive experiences (e.g. physical and verbal violence to the child or to the other parent; sexual abuse of the child – particularly when perpetrated by a parent) and MOPS scores for both parents.

In addition, the interviewing psychiatrist dimensionally rated (0–3, representing non-exposure to severe exposure) the extent to which patients had been subjected to a range of quite contrasting parental behaviours, again from one or both parents, and we inter-correlated those scores with parental MOPS abuse scores. For several (e.g. 'loss by death'), links were non-existent, being -0.09 with maternal and -0.01 with paternal abuse scores. For others, and particularly threatening parental characteristics, links were clear. Thus, higher 'violence or physical abuse' scores correlated 0.40 with maternal and 0.66 with paternal abuse scores; higher 'emotional or verbal abuse' scores correlated 0.51 and 0.62 with maternal and paternal

abuse scores, while higher 'making the child feel unsafe' scores correlated 0.39 with maternal and 0.65 with paternal abuse scores. Such findings provide support for the concurrent validity of the MOPS abuse scale.

Table 5 examines the extent to which PBI and MOPS scores showed differentiation across separate depressive subclasses. No significant differences were demonstrated for either measure when 'melancholic' and 'non-melancholic' classes were either DSM-IV or Newcastle defined, although there are trends for the DSM-IV defined 'non-melancholic' subjects to report less PBI-defined parental care and more anomalous MOPS scores. Changing the cut-off Newcastle score from 6 to 5, as used previously (e.g. Parker *et al.* 1992), did not generate any significant differences. In relation to our MDU clinical diagnoses, there were a number of significant differences (e.g. psychotic depression subjects returning the least anomalous scores on both the PBI and MOPS scales). As noted earlier, we amalgamated and contrasted two clinically diagnosed groups (psychotic/endogenous *v.* neurotic/reactive) as, in effect, 'melancholia' *versus* 'non-melancholia'. On the PBI measure, the clinically-defined non-melancholic subjects reported significantly less maternal and paternal care and greater maternal

Table 5. Comparison of PBI and MOPS scores returned by those with variably classified depressive subtypes

	N	PBI				MOPS					
		MC	MOP	PC	POP	MI	MOC	MA	PI	POC	PA
DSM-IV											
Mel	58	23.4	15.4	19.7	14.0	2.7	3.7	1.9	4.6	3.7	2.8
Non-mel	94	22.0	16.2	18.4	13.6	3.7	4.8	2.4	5.6	3.8	3.7
<i>t</i>		0.85	0.51	0.77	0.22	1.38	1.81	0.79	1.13	0.12	1.15
Clinical											
PD	13	29.1	13.7	22.8	14.0	0.8	2.7	1.0	1.6	2.9	1.4
ED	40	24.5	13.1	21.5	12.9	2.2	3.0	1.5	4.4	2.9	2.8
ND	53	19.8	18.7	17.4	14.1	4.8	5.8	3.1	6.8	4.2	4.0
RD	46	22.0	15.7	17.4	14.0	3.3	4.5	2.2	5.1	4.3	3.7
<i>F</i>		4.16**	3.36*	2.08	0.16	3.97**	6.39***	2.55	3.63	2.12	1.38
Clinical											
PD/ED	53	25.6	13.3	21.6	13.2	1.9	2.9	1.4	3.7	2.9	2.4
ND/RD	99	20.8	17.3	17.4	14.1	4.1	5.2	2.7	6.0	4.3	3.9
<i>t</i>		2.96**	2.69**	2.47*	0.57	2.86**	3.91***	2.32*	2.43*	2.53*	1.8
Newcastle											
Endogenous	38	21.5	16.4	19.3	15.0	3.8	4.4	2.4	5.0	4.0	3.0
Neurotic	114	22.8	15.7	18.7	13.3	3.2	4.4	2.2	5.3	3.7	3.5
<i>t</i>		0.70	0.40	0.32	1.01	0.77	0.12	0.45	0.21	0.46	0.48

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

PD, psychotic depression; ED, endogenous depression; ND, neurotic depression; RD, reactive depression.

Table 6. Comparison of PBI and MOPS scores returned by those meeting CIDI criteria for several individual and any lifetime anxiety disorders contrasted with those not receiving any such diagnosis

	PBI				MOPS						
	MC	MOP	PC	POP	MI	MOC	MA	PI	POC	PA	
Panic disorder (a)	21.2	19.1	16.2	15.9	4.2	5.4	2.2	7.2	5.2	4.1	
Generalized anxiety disorder (b)	20.0	18.1	15.2	14.9	4.7	5.0	2.3	6.9	4.4	2.9	
Social phobia (c)	22.5	17.5	17.7	14.3	4.3	5.2	2.4	6.4	4.5	3.9	
Obsessive-compulsive disorder (d)	23.3	17.2	18.3	12.3	5.3	5.3	1.9	6.9	4.3	3.5	
No anxiety disorder (e)	22.1	14.1	19.5	13.1	2.9	3.9	2.3	4.7	3.2	3.3	
<i>t</i> tests											
a v. e	0.46	3.07**	1.61	1.74	1.42	2.28*	0.25	2.24*	3.25**	0.82	
b v. e	0.77	1.78	1.79	0.85	1.46	1.21	0.01	1.65	1.53	0.33	
c v. e	0.25	2.13*	0.95	0.83	1.55	2.08*	0.08	1.6	2.18*	0.69	
d v. e	0.47	1.31	0.46	0.35	1.86	1.49	0.47	1.59	1.38	0.17	
a-d v. e	0.26	1.56	0.93	0.89	1.01	1.46	0.08	1.03	2.29*	0.77	

* $P < 0.05$; ** $P < 0.01$.

protection. Additionally, they returned significantly higher indifference and over-control MOPS scores from both parents, and higher abuse scores (significant, however, only in relation to mothers).

Table 6 examines PBI and MOPS scores in relation to CIDI-generated lifetime anxiety disorders, with comparison against the 70

subjects who failed to receive any such lifetime diagnosis. In relation to the PBI, panic disorder patients (28% of the sample) reported significantly higher maternal protection scores, a difference maintained ($t = 2.50$, $P < 0.05$) when analyses were restricted to those who developed that condition prior to any depressive disorder (14% of the sample). Social phobic patients

(32% of the sample) also reported significantly higher maternal protection scores, but such a trend was no longer significant ($t = 1.24$) when analyses were restricted to those who developed social phobia prior to their first depressive episode (21% of the sample). No differences were established when those with generalized anxiety disorder, social phobia or obsessive-compulsive disorder were contrasted with the non-anxiety comparison group. Again, PBI scores did not differ between those positive or negative for any anxiety disorder.

For the MOPS measure, very similar findings were generated for the maternal scales that approximate to the lengthier PBI ones. Thus, panic disorder and social phobic patients returned significantly higher maternal over-control scores. When analyses were restricted to only those who developed their disorder prior to their first depressive episode, the difference remained significant ($t = 2.86$, $P < 0.01$) for those ($N = 21$) with panic disorder, but no longer for those ($N = 32$) with social phobia ($t = 1.21$). Paternal MOPS over-control scores were, in comparison to PBI protection scores, significantly higher in those with panic disorder and those with social phobia, and retained significance in the 21 who had onset of their panic disorder prior to depression ($t = 2.27$, $P < 0.05$) but not for the 32 who developed social phobia prior to initial depression ($t = 1.03$). Those positive on any anxiety disorder scored their fathers higher on the paternal MOPS over-control scale than those negative for any anxiety disorder. Perhaps most importantly, there were no significant differences on either the maternal or paternal MOPS abuse scales for any of the anxiety disorders examined.

DISCUSSION

As noted, the PBI measure fails to assess physical and sexual abuse explicitly. While it is difficult to determine (see Thompson & Kaplan, 1996) when variations in parental care and over-protection become 'abusive', we accept the utility of measuring parental abuse more explicitly. Thus, we developed a set of items addressing broad domains of parental abuse (as well as an item assessing parental loss) and melded them with items assessing dimensions of care and over-protection. In comparison to the PBI, all items

were expressed in a 'negative' manner, and the properties of the measure studied in a clinical sample. The advantage of the latter approach (at least for development of the measure) is that a higher rate of dysfunctional parenting experiences might be anticipated, but a disadvantage is that mean scores cannot be regarded as normative and our sociodemographic findings may again be idiosyncratic to our clinical sample. We believe that it is unlikely that item scores were influenced by the subjects being depressed (and therefore negatively rating their parenting), as several studies (see Parker, 1983a) have demonstrated that PBI scores are not influenced by a depressed mood. A potential caveat emerges from those with psychotic depression, in that they returned the least 'dysfunctional parenting' scores on all measures. This may reflect reality or, as it is our clinical experience that those with psychotic depression often have difficulty in completing questionnaires validly, a social desirability or related bias instead.

While we assumed that a three-factor model would emerge in our PCAs (as we added a set of abusive parenting behaviours to items assessing two refined PBI dimensions), support was provided by only three eigenvalues exceeding 1.0, and with a three-factor solution being the most coherent in each of the parental forms. There was an advantage to the deletion of some initial items (e.g. 'Made me feel a failure') that risked tapping consequences of parenting behaviours rather than defining the behaviours and attitudes themselves. One item (i.e. 'Failed to provide a secure emotional environment for me') may have been too nebulous, while another (i.e. 'Became separated from me – by divorce, separation or other reasons') was regrettably non-specific, and might, if it had been retained in the measure, have allowed a range of separation experiences – from death through to holiday breaks – that might not necessarily have reflected significant separation. It is encouraging that the final 15-item measure accounted for nearly 80% of the variance in respective maternal and paternal analyses, suggesting very successful refinement of key dimensions.

In comparison to the PBI, raw scale scores on the MOPS measure were skewed, with a significant percentage of subjects returning zero scores, clearly a reflection of the items being weighted to significantly dysfunctional ex-

periences, and zero scale scores must be expected at an even higher rate in non-clinical samples. Inter-correlation of the two measures indicated that the indifference and over-control scales of the MOPS acted as refined proxies of the PBI care and protection scales, while the MOPS abuse scale had sufficient independence to allow its separate consideration in applied studies. A correlation matrix established that abuse scores were higher in parents rated as indifferent and somewhat higher in those rated as over-controlling. Importantly, there was no evidence that abuse scores were weighted to lower social class families. Patients who described parental abuse at interview from one or both parents returned significantly higher MOPS abuse scores, supporting the validity of the new scale, at least as an experiential measure. Additional evidence of its concurrent validity came from correlating MOPS abuse scores with the degree to which subjects reported exposure to a range of parental characteristics, and with abusive and threatening parenting experiences generating the strongest correlations.

We then considered the extent to which MOPS scale scores demonstrated relevance to those with depressive and anxiety disorders. For depression, it is important to note that we did not undertake a case-control study (i.e. comparing MOPS scores for those reaching clinical criteria for depression with those from an appropriate non-clinical sample). Numerous such studies have been undertaken for the PBI, and essentially demonstrate (see Parker & Gladstone, 1996) that those with melancholia or bipolar depression return PBI scores akin to age- and sex-matched controls, while those with non-melancholic depression report less parental care and, less distinctly and less consistently, a degree of parental over-protection. Such studies will need to be undertaken for the MOPS abuse scale (at least) to establish the relevance of overt abusive (as against aversive) parenting to depression *per se*. Our focus in this study was to determine if MOPS scores demonstrated specificity to major depressive subtypes. When 'melancholia' was defined by DSM-IV criteria or the Newcastle scale, we failed to demonstrate differential MOPS (or PBI) scale scores. When definition was by MDU clinical criteria, those defined non-melancholic subjects reported significantly higher MOPS parental indifference,

over-control, and abuse (the last significant only for maternal) scores. As anticipated, the MDU-defined non-melancholic subjects also reported lower PBI parental care and higher maternal over-protection scores. Thus, differentiation of parenting style to differing depressive subtypes was clearly influenced by the subtyping measure, an issue that requires close consideration.

The majority of PBI studies (e.g. Parker, 1983*a*; Parker *et al.* 1987) demonstrating specificity of anomalous parenting to the later development of non-melancholic depression have used clinician-based diagnostic judgments, a strategy that risks a clear bias (e.g. the clinician raters might obtain a history of dysfunctional parenting and be more likely to then assign a diagnosis of non-melancholic depression). Some studies (e.g. Parker *et al.* 1992), however, have demonstrated specificity using formalized diagnostic criteria, rejecting that caveat as being substantive. Nevertheless, that study demonstrated that varying definitions of melancholia and non-melancholia clearly influence the degree of specificity of the PBI measure in quantifying anomalous parenting for those with 'non-melancholic' depression. As the differences demonstrated on all three MOPS scales were restricted to clinical definition of melancholia, specificity of such anomalous parenting to depressive subtyping may be a true difference or reflect clinician factors dictating subtyping assignments.

While there have been several studies examining PBI scores returned by those with differing anxiety disorders (see Parker & Gladstone, 1996), few (e.g. Silove *et al.* 1991; Brown & Harris, 1993) have examined for specificity of anomalous parenting to separate anxiety subtypes such as panic disorder and generalized anxiety disorder (GAD). The present analyses then both expand that literature in relation to the PBI and, by using the PBI as a comparator, allow the potential utility of the MOPS abuse scale to be considered. Interpretation must be qualified as our sample was selected on the basis of subjects first meeting DSM-IV criteria for a major depressive episode rather than having an anxiety disorder only. Additionally, while our control group was pristine in comprising those who had never met criteria for any lifetime anxiety disorder, such (depressed) subjects may still differ (in terms of parenting experiences)

from those who have never met criteria for lifetime anxiety or depression. Finally, some of our anxiety group cell numbers were low, and all cells were further reduced when, in an attempt to overcome effects of depression-induced anxiety, we re-analysed our data for only those who developed their anxiety disorder prior to any depressive episode.

Given those limitations, both panic disorder and social phobic patients reported higher maternal PBI protection scores, and higher parental MOPS over-control scores, as reported in previous studies of those with panic disorder (Silove *et al.* 1991) and social phobia (e.g. Parker, 1983*a*), while such differences were not evident for those with GAD. There were clear trends for parental MOPS indifference and over-control scores to be higher for each of the separate anxiety disorders, but any such trends for the abuse scales were non-existent or slight. As these analyses should only be viewed as provisional (in the light of the sampling and other methodological issues noted above), it would be unwise to make too much of those differential trends, but the suggestion of specificity of anomalous parenting to panic disorder (but not to GAD) is compatible with the review by Brown & Harris (1993). In their own study, those authors failed to find any specificity of dysfunctional parenting to the anxiety disorders but their childhood adversity index did not have a protection or over-control component.

As noted in the introduction, Finlay-Jones & Brown (1981) identified differential life event specificity to the onset of anxiety and depressive disorders in adults. If such life events establish an early diathesis for any such specificity, we might anticipate that early parental abuse would preferentially dispose to anxiety disorders (as a consequence of their threat and danger connotations inducing insecurity). Our analyses, however, failed to establish higher parenting abuse scores for the anxiety disorders – but did (in relation to mothers only) link higher abuse scores with a clinical diagnosis of non-melancholic depression. As we have already expressed a caveat about clinical diagnoses, and as all our patients had a depressive disorder, it would be unwise to argue that we have established any greater specificity of parental abuse to adult depression than to adult anxiety, but

future studies should clearly pursue differential consequences of aversive and abusive parenting experiences.

We conclude by considering the potential utility of the MOPS. First, as the 10 items of the indifference and over-control scales correspond to the 25-item PBI care and protection scales, its first potential use is as a shortened version of the PBI. Clearly, the complete PBI has been extensively examined in terms of its psychometric properties, an advantage to most researchers. For a number of reasons, researchers often require shortened versions resulting in abbreviated PBI scales being used in a number of studies (e.g. Kendler, 1995), and we have here established support for correspondence between the relevant scales of the MOPS and the PBI. Secondly, unlike the PBI, the MOPS measure incorporates a scale designed specifically to assess parental abuse. Thirdly, as the instructions and scoring details are identical for the PBI and MOPS, the researcher can regard the separate scales as independent but compatible modules available for variable combination. Thus, the MOPS abuse scale could remain integral to the MOPS or complement the standard PBI. We suggest that the MOPS has the capacity to serve as a broad-brush measure of the likelihood of exposure to dysfunctional parenting, although we will need to demonstrate that it has adequate sensitivity as a screening measure in later studies. It is not an advance on the PBI – where scales have relatively normal distributions, so assisting the range of applied statistical analyses – but has the advantage of brevity and greater breadth to the assessment of parenting.

Thompson & Kaplan (1996) have recently provided an overview of childhood emotional abuse, and noted the need to develop instruments for its assessment. While the PBI assesses perceived aversive parenting, it lacks the specificity required for examining the nuances of particularly abusive scenarios. Whether the latter can or should be assessed by questionnaire or require careful and detailed interviewing is clearly a broader question, but the MOPS abuse scale may well act as a useful screening strategy assessing probability as well as allowing the level of any abuse to be simply quantified.

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